

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
MEETING OF FEBRUARY 13 AND 14, 2008
VICTORVILLE, CALIFORNIA**

ITEM: 9

SUBJECT: NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT RENEWAL FOR VICTOR VALLEY WASTEWATER
RECLAMATION AUTHORITY - REGIONAL WASTEWATER
TREATMENT PLANT, SAN BERNARDINO COUNTY

CHRONOLOGY: November 17, 1999 Board Order No. 6-99-58 adopted, revising the requirements for surface water discharge to the Mojave River prescribed under federal National Pollutant Discharge Elimination System (NPDES) authority and percolation pond requirements prescribed under State authority.

ISSUES: There is a need to revise the NPDES permit to address expansion of the treatment plant and to address new compliance limits. This permit also no longer combines the land and surface water discharges into one permit.

DISCUSSION: This item is for renewal of the Victor Valley Wastewater Reclamation Authority (VWVRA) NPDES permit for Mojave River discharges. The proposed permit addresses a number of new or significant issues as summarized below. An important administrative change is use of the State Water Board's new NPDES permit template format, which includes an extensive Fact Sheet documenting the basis for permit conditions.

Wastewater is collected from the Town of Apple Valley, City of Hesperia, City of Victorville and County of San Bernardino Special Districts (No. 42, Spring Valley Lake and No. 64, Oro Grande). The wastewater is treated at VWVRA's Shay Road plant, located north of Victorville. For the year 2007, an average of 12.3 million gallons per day (mgd) of municipal wastewater was treated and disposed as follows, with seasonal variation:

- 7.8 mgd - tertiary treated effluent to the Mojave River,
- 4.2 mgd - undisinfected secondary treated effluent to onsite percolation ponds, and
- 0.3 mgd - recycled water used at West Winds Golf Course on Southern California Logistics Airport (former George Air Force Base, adjacent to VWVRA) and at the California Biomass waste recycling facility (located onsite VWVRA).

09-0001

The proposed Order covers the following expansions and upgrades that VWRA has completed, or is planning to complete, to accommodate increased flows due to growth and development.

- 11.0 mgd - in 2002
- 12.5 mgd - in 2004
- 14.5 mgd - in progress, (98% complete in Dec 2007)
- 18.0 mgd - in progress, (90% complete in Dec 2007)
- 22.0 mgd - planned for completion in mid-2011

The discharger has requested to increase its discharge to the Mojave River from 8.3 mgd to 14.0 mgd. The proposed Order allows the requested flow increase and increases the mass loading limits based on the increased Mojave River discharge.

Historically, the VWRA permit has been adopted as a combined NPDES permit for Mojave River discharges and Waste Discharge Requirements for onsite percolation pond discharges. Separate Reclamation Requirements were adopted in 2003 allowing effluent disposal at West Winds Golf course. The proposed Order regulates only Mojave River discharges. It rescinds those portions of the previous Board Order for surface water discharges. The existing permit will continue in effect for percolation pond discharges only.

The proposed Order requires two additional surface receiving water monitoring stations to be developed to assess the effects of the discharge on the Mojave River. The Order also requires continued reporting of groundwater monitoring data because Mojave River discharges affect groundwater down gradient of VWRA.

The California Toxics Rule was adopted in 2000 establishing federal water quality criteria for 126 priority pollutants. The State Water Board adopted a State Implementation Plan for the Toxics Rule. As a result, VWRA conducted a Reasonable Potential Analysis evaluating these pollutants in the discharge. The proposed Order includes new effluent limits for the following priority pollutants.

- Copper
- Zinc
- Cyanide
- Chlorodibromomethane
- Dichlorobromomethane
- Bis(2-ethylhexyl)phthalate
- Dibenzo(a,h)anthracene

The proposed Order includes a time schedule to meet the final priority pollutant effluent limits along with interim limits. Permits can include time schedules for priority pollutants because the State Implementation Plan specifically allows it.

Using the same approach as the State Implementation Plan, a Reasonable Potential Analysis was conducted for non-priority pollutants with respect to the effect of the discharge on receiving water quality objectives identified in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The proposed Order includes new effluent limits for the following non-priority pollutants.

- Ammonia
- Nitrogen

The proposed Order does not allow a time schedule for meeting new effluent limits because the Water Board's Basin Plan does not specifically allow it. Therefore, a separate Cease and Desist Order proposes a time schedule to meet effluent limits based upon VWVRA completing the 22 mgd treatment plant upgrade:

The proposed Order allows some degradation due to the discharge. This degradation is consistent with State Board Resolution 68-16 (Anti-degradation Policy) because pollution does not result, the best practicable treatment or control of the discharge is utilized during the interim and following the 22 mgd upgrade, and it is in the best interest of the people of the state to accommodate economic growth.

Regional Board staff has solicited comments from interested parties. Comments were received from the discharger. The 30-day public comment period started January 9, 2008, ending February 8, 2008. Board staff has addressed comments received to date in the Proposed Order. Any additional comments received will be addressed at the February Regional Board meeting.

**RECOMMEND-
ATION:**

Adoption of Order as proposed.

Enclosures:

1. Proposed Board Order
2. VWVRA Comments
3. Water Board staff responses

ENCLOSURE 1

09-0004



Linda S. Adams
Agency Secretary

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LAHONTAN REGION

14440 Civic Drive, Suite 200
Victorville, CA 92392
Phone 760-241-6583 • Fax 760-241-7308
<http://www.waterboards.ca.gov>



Arnold Schwarzenegger
Governor

ORDER NO. R6V-2008-(PROPOSED)
NPDES NO. CA0102822
WDID No. 6B360109001

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT RENEWAL

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY,
REGIONAL WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92392
	San Bernardino County
Mailing Address	Victor Valley Wastewater Reclamation Authority
	15776 Main St, Ste 3
	Hesperia CA 92345

The discharge by the **Victor Valley Wastewater Reclamation Authority** from the discharge point identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary Treated Effluent (Disinfected)	34 °, 37', 1" N	117 °, 21', 12" W	Mojave River

Coordinates collected with a Garmin in WGS 84 NAD 83

Discharge specifications for the discharge of secondary treated effluent to percolation ponds and use of recycled water onsite and offsite are regulated under separate Orders.

09-0005

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	February 14, 2008
This Order shall become effective on:	April 4, 2008
This Order shall expire on:	April 4, 2013
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

The Water Board intends this Order to update and replace the NPDES portions of Order 6-99-58 and that the land discharge portions of Order 6-99-58 remain in effect. Therefore,

IT IS HEREBY FURTHER ORDERED, that the following sections of Order No. 6-99-58 are rescinded, or modified as indicated, upon the effective date of this Order, except for enforcement purposes.

1. The title of Order No. 6-99-58 is modified as follows:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTO ANTONIO REGION

BOARD ORDER NO. 6-99-58
NPDES NO. CA 0102822 - WDID NO. 6B360109001

REVISED WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM PERMIT RENEWAL
FOR

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
REGIONAL WASTEWATER TREATMENT PLANT

2. The page header of Order No. 6-99-58 is modified as follows:

VICTOR VALLEY WASTEWATER
RECLAMATION AUTHORITY
San Bernardino County

-2-

BOARD ORDER NO 6-99-58
NPDES NO. CA 0102822
WDID NO. 6B360109001

3. Finding No. 9 of Order No. 6-99-58 is modified as follows.

9. Authorized Disposal Sites

~~Discharge 001 (discharge to the Mojave River),~~ The percolation ponds, landscape areas which are a part of the treatment Facility, and maintenance and plant washdown areas at the Facility are the only authorized disposal sites. The Facility, which includes the percolation ponds, is located on land owned by the Discharger. Upon Regional Board adoption of water recycling requirements for discharge to golf course irrigation, and adoption of WDRs for the composting facility as described in Finding No. 8., those future potential facilities will become respective authorized water recycling and biosolids composting sites.

4. Finding No. 19 of Order 6-99-58 is deleted.
5. Delete Discharge Specifications for Effluent Limitations I.A. 1, 2, 4, 5, 9, 10, 11, 12, 14, and 16.
6. Delete the phrase "either the Mojave River or" in Discharge Specifications for Effluent Limitations I.A.7 and 15.
7. Delete Discharge Specifications for Receiving Water Limitations I.B.2.
8. Delete the phrase "surface waters of the Mojave Hydrologic Unit and" in Discharge Specification for Receiving Waters I.B.3.
9. Delete Provision II.A for National Pollutant Discharge Elimination System.
10. Provision II.C for Standard Provisions is deleted and replaced with the following:
"Standard Provisions for Waste Discharge Requirements" – (Attachment Z).
11. Delete Explanatory Provision II.D.1.
12. Delete Pretreatment Program Specifications II.F.1 and 2.
13. Delete Administrative Provision II.G.2
14. Delete Attachments D and E (of Order No. 6-99-58).

IT IS HEREBY FURTHER ORDERED, that the following sections of Monitoring and Reporting Program No. 6-99-58 are rescinded, or modified as indicated, upon the effective date of this Order, except for enforcement purposes.

1. Delete Flow Monitoring Sections I.A. 1, 2, 3, 4, 9, and 11.
2. Delete Facility Influent Monitoring Section I.B.
3. Delete the phrase "and Mojave River" in Flow Monitoring Sections I.A. 5, 6 and 7.
4. Delete Effluent Monitoring Section I.C. (Facility Effluent Monitoring – River Discharge), I.F. (Surface Water Monitoring), I.G. (Chronic toxicity), I.H. (Acute Toxicity), I.I. (Pretreatment Reporting), and I.J. (Biosolids Disposal).

5. Delete Data Reporting Section I.M.1, 2, 3, and 6 (retaining introductory paragraph and sections 4 and 5).

I, Harold J. Singer, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on **February 14, 2008.**

Harold J. Singer, Executive Officer

PROPOSED

Table of Contents

I.	Facility Information	7
II.	Findings	7
III.	Discharge Prohibitions	15
IV.	Effluent Limitations and Discharge Specifications.....	16
	A. Effluent Limitations – Discharge Point 001	16
	B. Land Discharge Specifications – NOT APPLICABLE (See Order No. 6-99-58)	19
	C. Reclamation Specifications – NOT APPLICABLE (See Order No. 6-99-58 and Order No. R6V-2003-028).....	19
V.	Receiving Water Limitations.....	19
	A. Surface Water Limitations.....	19
	B. Groundwater Limitations	23
VI.	Provisions	24
	A. Standard Provisions.....	24
	B. Monitoring and Reporting Program (MRP) Requirements	24
	C. Special Provisions	24
	1. Reopener Provisions	24
	2. Special Studies, Technical Reports and Additional Monitoring Requirements	25
	3. Best Management Practices and Pollution Prevention	27
	4. Construction, Operation and Maintenance Specifications	29
	5. Special Provisions for Municipal Facilities (POTWs Only).....	29
	6. Other Special Provisions.....	31
	7. Compliance Schedules.....	31
VII.	Compliance Determination	33
	A. General.....	33
	1. Compliance with Priority Pollutant Limitations.....	33
	2. Compliance with Total Residual Chlorine (TRC) Limitations	33
	B. Multiple Sample Data.....	33
	C. Average Monthly Effluent Limitation (AMEL).....	33
	D. Average Weekly Effluent Limitation (AWEL).....	34
	E. Maximum Daily Effluent Limitation (MDEL).....	34
	F. Instantaneous Minimum Effluent Limitation.....	34
	G. Instantaneous Maximum Effluent Limitation.....	34
	List of Tables	
	Table 1. Discharger Information.....	1
	Table 2. Discharge Location.....	1
	Table 3. Administrative Information.....	2
	Table 4. Facility Information	7
	Table 5. Basin Plan Beneficial Uses	10
	Table 6. Final Effluent Limitations – Discharge Point 001	16
	Table 7. Interim Effluent Limitations for Priority Pollutants – Discharge Point 001.....	19

List of Attachments

Attachment A – Definitions.....	A-1
Attachment B – Map.....	B-1
Attachment C – Flow Schematic.....	C-1
Attachment D – Standard Provisions	D-1
Attachment E – Monitoring and Reporting Program (MRP)	E-1
Attachment F – Fact Sheet	F-1
Attachment G – Basin Plan Ammonia Water Quality Objective Table.....	G-1
Attachment H – Basin Plan Dissolved Oxygen Water Quality Objective Table.....	H-1
Attachment I – Water Quality-based Effluent Limitations Calculations for Priority Pollutants...I-1	I-1
Attachment Z – Standard Provisions for Waste Discharge Requirements (Attachment only for Order No. 6-99-58 – does not apply to this Order).....	Z-1

I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title, and Phone	Logan Olds, General Manager, 760-246-8638
Mailing Address	15776 Main Street, Hesperia CA 92345
Type of Facility	Regional :Publicly-Owned Treatment Works (POTW)
Facility Design Flow	12.5 mgd; up to 14.5 mgd (planned) and 18.0 mgd (planned) and 22.0 mgd (planned) following upgrades and expansions; 14.0 mgd (planned) discharged to surface water and regulated under this Order. The remainder discharger to percolation ponds regulated separately

II. FINDINGS

The California Regional Water Quality Control Board, Lahontan Region (hereinafter Water Board), finds:

A. Background. Victor Valley Wastewater Reclamation Authority (hereinafter Discharger) is currently discharging pursuant to Order No. 6-99-58 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0102822; Order No. R6V-2003-28, which regulates recycled water, used offsite; and Order No. 6-99-58, which regulates land discharges and recycled water used onsite. The Discharger submitted a Report of Waste Discharge, dated May 19, 2004, and applied for a NPDES permit renewal to discharge up to 12.5 mgd of tertiary treated and secondary treated wastewater from Victor Valley Wastewater Treatment Plant, hereinafter Facility. The Discharger is upgrading and expanding its capacity to 14.5 mgd (Phase I), 18.0 mgd (Phase II) and 22.0 mgd (Phase III). The Discharger submitted an *Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant* on March 16, 2007, and a Report of Waste Discharge, dated June 28, 2006, for the first two phases of expansion. The Discharger also submitted an *Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant: River Discharge* on August 28, 2007 and a revised Report of Waste Discharge, dated August 13, 2007, discussing its planned expansion to a 22.0 mgd discharge. The August 13, 2007, Report of Waste Discharge specifically requested expansion of the effluent discharge to surface water (Discharge Point 001) from 8.3 mgd to 14.0 mgd. VVWRA submitted an NPDES permit application for the increased flow on January 7, 2008 (amended on January 15, 2007). This surface water discharge is the discharge regulated in this Order.

In support of the requests to expand its discharge capacity to all waters, as well as specifically to surface waters, in the Reports of Waste Discharge submitted on June 28, 2006, and August 13, 2007, the Discharger has provided the Water Board with Basis of Design Reports, Construction Drawings, and Mitigation Monitoring Reports.

The existing Order for VVWRA (Order No. 6-99-58), Provision II.A provides for permit continuance beyond the November 2004 expiration date if the discharger (1) submitted a renewal application at least 180 days prior to the expiration date and (2) maintained adequate compliance. In May 2004, VVWRA submitted a permit renewal application. The Fact sheet, Section II.D, describes instances of noncompliance since the permit expired in November 2004. Separate Water Board enforcement actions are planned for those issues. The Water Board is considering a separate Cease and Desist Order to address violations of receiving water quality objectives for nitrate (both ground and surface waters).

The trunk line sewer collection system owned and operated by VVWRA is regulated under State Water Board general Order 2006-2003-DWQ as well as lateral collection systems owned and operated by the VVWRA member entities: City of Hesperia, City of Victorville, Town of Apple Valley, and San Bernardino County Service Areas 42 (Oro Grande) and 64 (Spring Valley Lake). Storm water discharges from the plant are regulated under State Water Board General Industrial Order 97-03DWQ and General Construction Order 99-08DWQ.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The Discharger owns and operates a regional wastewater treatment plant. The treatment system consists of headworks, primary clarifiers, flow equalization/aeration basins, secondary clarifiers, coagulation/flocculation, filtration, and chlorination/dechlorination, and sludge handling. Wastewater requiring tertiary treatment is discharged from Discharge Point 001 (see table on cover page) to the Mojave River, a water of the United States within the Upper Mojave River Hydrologic Area. Wastewater requiring secondary treatment is discharged to North and South Percolation Ponds, collectively Discharge Point 002, and, ultimately, to the Upper Mojave River Valley Groundwater Basin. Recycled water (tertiary treated effluent) from the facility also is reused on-site and for landscaping and turf irrigation at the City of Victorville Westwinds Golf Course, Discharge Point 003. Only the discharge from Discharge Point 001 is regulated in this Order. Attachment B provides maps of the area around the facility. Attachment C provides a flow schematic of the facility.

The additional flow from the Phase I and Phase II expansions will be discharged after secondary treatment to newly constructed percolation ponds, from where it will percolate into the groundwater. The Discharger also is undertaking additional denitrification, replacing sludge drying beds with belt filter presses, and lining sludge lagoons as additional control measures.

In the 22 MGD Phase III Expansion Project, the Discharger will add biological nitrogen removal capability and replace tertiary filtration capability using membrane biological reactor technology (see Facility Flow Sheet, Attachment C). Because this technology functions as both secondary clarification and tertiary filtration, the Discharger will convert existing air bays to pre-anoxic reactor tanks and post-anoxic reactor tanks. The Discharger also proposes to replace chlorination disinfection and dechlorination technologies with UV filtration.

- C. Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through I also are incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133. A detailed discussion of the development of technology-based effluent limitations is included in the Fact Sheet.
- G. Water Quality-based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements. These requirements are necessary to meet applicable water quality standards. These requirements include tertiary treatment and are discussed in Section IV.B.2 of the Fact Sheet.

¹ All further regulatory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using one or more of the following options: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) which became effective on March 31, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Mojave River and the upper Mojave River Valley Ground Waters are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001.	Mojave River; Surface Water (Dept. of Water Resources No. 628.00 - Mojave Hydrologic Unit)	Existing: Municipal and domestic water supply (MUN), Agricultural Supply (AGR), Groundwater Recharge (GWR), Contact (REC-1) and Non-Contact (REC-2) water recreation, Commercial and Sport fishing (COMM), Cold Freshwater Habitat (COLD), Warm freshwater habitat (WARM), wildlife habitat (WILD)

Requirements of this Order implement the Basin Plan.

VVWRA is currently collecting data to characterize the water quality, biological resources, and beneficial uses of the Mojave River upstream and downstream of the VVWRA discharge. This information may be used to assist in updating the Basin Plan water quality standards, if appropriate, for certain constituents such as ammonia. Upon completion of the study (June 30, 2010), the Water Board may use this information, or other additional data, to amend the Basin Plan accordingly.

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in

addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. State Implementation Policy. On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. This Order includes compliance schedules and interim effluent limitations and discharge specifications for effluent limitations derived from CTR criteria. A detailed discussion of the basis for the compliance schedules and interim effluent limitation(s) and discharge specifications is included in the Fact Sheet. This Order is newly implementing CTR criterion.

L. Alaska Rule. On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. Individual pollutant restrictions in this Order consist of technology-based and water quality-based effluent limitations. This Order contains some restrictions on individual pollutants that are more stringent than the minimum technology-based limitations required by the federal CWA. Specifically, technology-based effluent limitations for two constituents, 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS), are more

stringent than required by the secondary treatment standards under the CWA. As explained in Section IV.B.2 of the Fact Sheet (Attachment F), these effluent limitations are based on the performance of the Discharger's tertiary treatment system. This tertiary treatment system is necessary to protect the beneficial uses of the receiving water and meet requirements for recycled water, consistent with Water Code section 13241 (specifically (a) and (f)).

In addition, these limitations were included in and carried over from Order No. 6-99-58. Water quality-based effluent limitations in this Order have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses in the Basin Plan were approved by USEPA in 2004 and are applicable water quality standards pursuant to section 131.21(c)(2).

N. Antidegradation Policy. 40 CFR Section 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies.

The discharger plans to construct new facilities that will result in a higher effluent quality discharged to the Mojave River. Some additional nitrate-nitrogen and ammonia-nitrogen mass loading will result until new facilities are completed, because of increased flow. However, after completion of planned plant upgrades in 2011-2012 decreased nitrogen mass will be discharged.

As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16 because VVWRA demonstrated that changes in water quality from the discharge:

- *Are consistent with maximum benefit to people of the state* in that following planned treatment plant upgrades, effluent quality is improved using best practicable treatment or control technology;

- *Will not unreasonably affect present and anticipated beneficial use of such water in that the final effluent limitations are protective of receiving water quality objectives for nitrate-nitrogen and ammonia nitrogen;*
- *Will not result in water quality less than prescribed in policies in that the final effluent limitation will not unreasonably affect present and anticipated beneficial uses and not result in a water quality less than prescribed in the Basin Plan; and*
- *Best practicable treatment or control of the discharge is used to assure that (1) a pollution or nuisance will not occur and (2) the highest water quality consistent with maximum benefit to people of the state will be maintained. This condition is met because: (1) the discharger's planned upgrades consist of Membrane Biological Reactor treatment for filtration and nitrification-denitrification and ultraviolet (UV) disinfection produces effluent quality better than water quality objectives and (2) is cost effective as compared to using reverse osmosis technology while continuing to allow the community economic growth.*

The Water Board concludes that the proposed project results in the highest water quality consistent with maximum benefit to the people of the state and State Board Resolution 68-16 conditions are satisfied.

O. Anti-Backsliding Requirements. Sections 402(b)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

T. Notification of Interested Parties. The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

U. Consideration of Public Comment. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

III. DISCHARGE PROHIBITIONS

A. In accordance with the Region-wide Prohibitions in Section 4.1 of the Basin Plan:

1. The discharge of waste² that causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation Objective, is prohibited.
2. The discharge of waste that causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.
3. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.
4. The discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters of the Region is prohibited.
5. The discharge of wastewater to the Mojave River, except to authorized discharge points, is prohibited. Discharge from Discharge Point 001 to the Mojave River is authorized under this order. Land discharges from additional discharge points are regulated under separate Order(s). Stormwater discharges from the facility are also regulated under separate Order(s).

B. There shall be no discharge, bypass, or diversion of raw or partially treated wastewater, wastewater biosolids, grease, or oils from the collection, transport, treatment, emergency storage, or disposal facilities to adjacent land areas, or surface waters except as in compliance with Standard Provisions for bypass (Attachment D).

C. The discharge shall not cause pollution as defined in Section 13050 of the California Water Code, or a threatened pollution.

D. The collection, transport, treatment, storage, or discharge of waste shall not cause a nuisance as defined by Section 13050(m) of the California Water Code.

² "Waste" is defined to include any waste or deleterious material including, but not limited to, waste earthen materials (such as soil, silt, sand, clay, rock, or other organic or mineral material) and any other waste as defined in the California Water Code § 13050(d).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

- The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location **EFF-001** as described in the attached MRP:

Table 6. Final Effluent Limitations – Discharge Point 001

Parameter	Units	Final Effluent Limitations					Basis	
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum		Six-Month Median
Conventional Pollutants								
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10	15	30	—	—	—	E
	lbs/day	1,170	1,750	3,500	—	—	—	E
pH	standard units	—	—	—	6.5	8.5	—	WQO
Total Suspended Solids	mg/L	10	15	30	—	—	—	E
	lbs/day	1,170	1,750	3,500	—	—	—	E
Priority Pollutants								
Copper, Total Recoverable	µg/L	13	—	20	—	—	—	CTR
	lbs/day	1.5	—	2.3	—	—	—	CTR
Zinc, Total Recoverable	µg/L	77	—	190	—	—	—	CTR
	lbs/day	9.0	—	22	—	—	—	CTR
Cyanide, Total (as CN)	µg/L	36	—	9.6	—	—	—	CTR
	lbs/day	0.42	—	1.1	—	—	—	CTR
Chlorodibromomethane (Dibromochloromethane)	µg/L	0.41	—	1.3	—	—	—	CTR
	lbs/day	0.048	—	0.15	—	—	—	CTR

Limitations and Discharge Requirements

09-0020

Parameter	Units	Final Effluent Limitations						Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median	Average Annual
Dichlorobromomethane (Bromodichloromethane)	µg/L	0.56	--	1.4	--	--	--	--
	lbs/day	0.065	--	0.16	--	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	1.8	--	3.6	--	--	--	--
	lbs/day	0.21	--	0.42	--	--	--	--
Dibenzo(a,h)anthracene	µg/L	0.0044	--	0.0088	--	--	--	--
	lbs/day	0.00051	--	0.0010	--	--	--	--
Non-Conventional Pollutants								
Ammonia Nitrogen, Total (as N)	mg/L	0.80	--	1.5	--	--	--	--
	lbs/day	93.4	--	175	--	--	--	--
Chlorine, Total Residual ²	mg/L	--	--	0.003	--	--	0.002	--
	lbs/day	--	--	0.350	--	--	0.234	--
Dissolved Oxygen	mg/L	--	--	--	--	--	--	--
Methylene Blue Active Substances (MBAS)	mg/L	0.50	--	0.90	--	--	--	--
	lbs/day	58.4	--	105	--	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	8.2	--	11.3	--	--	--	--
	lbs/day	957	--	1320	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	--	--	580	--	--	--	460
	lbs/day	--	--	67,700	--	--	--	53,700
								E
								E

"--" = not applicable

1 E = Existing Permit (Order No. 6-99-58); CTR = California Toxic Rule; and WQOs = Basin Plan Water Quality Objectives; A = Antidegradation Policy

2 Concentration-based effluent limitations for Total Residual Chlorine are below the expected minimum level (ML) for this constituent. Non-compliance with a Total Residual Chlorine limitation is defined by exceeding both the limitation and the Reporting Level (RL) used by the Discharger. The Discharger must achieve the lowest possible RL for Total Residual Chlorine but, in no case, may the RL be greater than 0.1 mg/L.

Limitations and Discharge Requirements

09-0021

- b. **Flow:** The average annual flow of effluent discharged to the Mojave River shall not exceed 14.0 million gallons per day (mgd) in any calendar year.
- c. **BOD and TSS Percent Removal:** The average monthly percent removal for Biochemical Oxygen Demand (5-day @ 20° C) and Total Suspended Solids shall be at least 85 percent.
- d. **Fecal Coliform:** Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of fecal coliform bacteria shall not exceed either of the following:
- A log mean of 20 per 100 mL for any 30-day period
 - 40 per 100 mL in more than 10 percent of all of the samples collected in any 30-day period.
- e. **Total Coliform:** Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of total coliform bacteria shall not exceed any of the following:
- A median Most Probable Number (MPN) of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed
 - An MPN of 23 per 100 mL in more than one sample in any 30-day period
 - An MPN of 240 per 100 mL at any time (instantaneous maximum).
- f. **Turbidity:** Effluent shall be a filtered wastewater that does not exceed any of the following:
- An average of 2 NTU within a 24-hour period
 - 5 NTU more than 5 percent of the time in a 24-hour period
 - 10 NTU at any time (instantaneous maximum).
- g. **Acute Toxicity:** The effluent shall not exhibit acute toxicity, defined as:
- Less than 90 percent survival of *Pimephales promelas* in undiluted effluent in ≥ 50 percent of the samples in a calendar year; or
 - Less than 70 percent survival of *Pimephales promelas* in undiluted effluent in ≥ 10 percent of the samples in a calendar year.

Acute whole effluent toxicity (WET) testing shall be conducted in accordance with the requirements specified in the Monitoring and Reporting Program (Attachment E).

2. Interim Effluent Limitations – Discharge Point 001

During the period, beginning **April 4, 2008** and continuing through **May 17, 2010**, the discharge of tertiary-treated effluent shall maintain compliance with the following interim effluent limitations for priority pollutants at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, the sample box before the Parshall Flume, as described in the attached Monitoring and Reporting Program (Attachment E). These interim effluent limitations for priority pollutants shall apply in lieu of the corresponding Final Effluent Limitations specified for the same parameters during the time period indicated in this provision, and are as follows:

Table 7. Interim Effluent Limitations for Priority Pollutants – Discharge Point 001

Parameter	Units	Interim Effluent Limitations	
		Average Monthly	Maximum Daily
Priority Pollutants			
Zinc, Total Recoverable	µg/L	--	240
	lbs/day	--	28
Cyanide, Total (as CN)	µg/L	--	23
	lbs/day	--	2.7
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	30
	lbs/day	--	3.5
Dichlorobromomethane (Bromodichloromethane)	µg/L	--	18
	lbs/day	--	2.1
Bis(2-ethylhexyl)phthalate	µg/L	--	47
	lbs/day	--	5.5
Dibenzo(a,h)anthracene	µg/L	--	0.19
	lbs/day	--	0.022

B. Land Discharge Specifications – NOT APPLICABLE (See Order No. 6-99-58.)

C. Reclamation Specifications – NOT APPLICABLE (See Order No. 6-99-58 and Order No. R6V-2003-028)

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the Mojave River:

1. This discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Water Board or the SWRCB as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Clean Water Act or amendments thereto, the Water

Board may revise and modify this Order in accordance with such more stringent standards.

2. Ammonia: The neutral, unionized ammonia species (NH_3°) is highly toxic to freshwater fish. The fraction of toxic NH_3° to total ammonia species ($\text{NH}_4^+ + \text{NH}_3^\circ$) is a function of temperature and pH. Tables 3-1 to 3-4 from the Basin Plan, contained in Attachment G of this Order, were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in these tables. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas available on page 3-4 of the Basin Plan.
3. Bacteria, Coliform: Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 mL, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 mL. The US EPA recommends that the log mean should ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. [Reference: Ambient water Quality Criteria for Bacteria – 1986, EPA 440/5-84-002, page 2] However, a log mean concentration exceeding 20/100 mL for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.
4. Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.
5. Chemical Constituents: Waters designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of Title 22 of the California Code of Regulations. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes). Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
6. Chlorine, Total Residual: For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L. Median values shall be based on daily measurements taken within any six-month period.
7. Color: Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
8. Dissolved Oxygen: The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. The minimum

dissolved oxygen concentration shall not be less than that specified in Table 3-6 in Attachment H of this Order.

9. Floating Materials: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernable at the 10 percent significance level.
10. Oil and Grease: Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.
11. Nondegradation of Aquatic Communities and Populations: All waters shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants, or which lead to the presence of undesirable or nuisance aquatic life. All waters shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.
12. Pesticides: According to the Basin Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, pesticides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code § 12753). Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life. Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Title 22 of the California Code of Regulations.
13. pH: Changes in normal ambient pH levels shall not exceed 0.5 pH units. The pH shall not be depressed below 6.5 nor raised above 8.5. Compliance with the pH objective for these waters will be determined on a case-by-case basis.
14. Radioactivity: Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations.

15. Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.
16. Settleable Materials: Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.
17. Suspended Materials: Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
18. Taste and Odor: Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.
19. Temperature: The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature shall not be altered by more than five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered [Note: The Basin Plan does not specify which reaches of the Mojave River have a COLD and which have a WARM beneficial use. Therefore, the most restrictive standard (e.g. no alteration of temperature for the COLD use) applies. However, for purposes of compliance and enforcement, the Water Board will consider historical data and the impact of temperature alternations upon the beneficial uses of the Mojave River below the Discharge Point 001.]
20. Toxicity: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Water Board [or the Executive Officer or his/her designee]. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).

21. Turbidity: Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

B. Groundwater Limitations

The discharge shall not cause the ground waters of the Upper Mojave River Valley Ground Water Basin to exceed the following objectives:

1. Coliform, Total: In ground waters designated as MUN, the median concentration of coliform organisms over any seven-day period shall be less than an MPN of 1.1 per 100 mL.
2. Chemical Constituents: Ground waters designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of Title 22 of the California Code of Regulations. Ground waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes). Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
3. Radioactivity: Ground waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations.
4. Taste and Odor: Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For ground water designated as MUN, at a minimum, concentrations shall not exceed adopted SMCLs specified in Title 22 of the California Code of Regulations.
5. General: The discharge shall not cause the groundwater to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. Water Board Standard Provisions – Attachment Z applies only to Board Order No. 6-99-58, not this Order, until that permit is modified or rescinded.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

- a. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Water Board may revise and modify this Order in accordance with such more stringent standards.
- b. The Board may reopen this order to establish new conditions or effluent limitations should monitoring data, toxicity-testing data, or other new information indicate that a constituent is discharged at a level that will do any of the following. 1) Cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality criteria or objective, 2) Cause, have reasonable potential to cause, or contribute to a violation of any narrative water quality objective from the Basin Plan.
- c. This Order includes final effluent limitations at Discharge Point 001 (discharge to the Mojave River). VVWRA is currently collecting effluent and receiving water (Mojave River) monitoring data for many constituents. After review and analysis of new or additional data, the Board may choose to reopen this Order to modify the final effluent limitations at Discharge Point 001 to ensure that the discharge is in compliance with the Basin Plan. New effluent limitations may be established to attain all beneficial uses, water quality objectives, and nondegradation of water quality, as specified in the Basin Plan.
- d. This Order includes a Provision in Section VI.C.2.c permitting the Discharger to complete and submit optional studies for consideration by the Water Board. One optional study is development of a proposed metals translator for copper and zinc. A second optional study involves collection of additional, reliable effluent and receiving water monitoring data for cyanide, bis (2-ethylhexyl)phthalate, and dibenzo (a,h,) anthracene. A third optional study is development of a water effects ratio (WER) for ammonia. Upon submission of a metals translator or

additional effluent and receiving water data for selected priority pollutants, the Water Board may review the final effluent limitations at Discharge Point 001 for copper and zinc and the reasonable potential determinations and final effluent limitations for cyanide, bis (2-ethylhexyl)phthalate, and dibenzo (a,h,) anthracene. Based on the results of this review, the Water Board may reopen this Order and modify the final effluent limitations for copper and zinc or remove or modify, if appropriate, the final effluent limitations for cyanide, bis (2-ethylhexyl)phthalate, and dibenzo (a,h,) anthracene established in this Order. If the Water Board amends the Basin Plan to reflect the results of the ammonia WER study and USEPA approves the amendment, the Water Board may subsequently reopen this Order and modify the effluent limitations for ammonia.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Chronic Toxicity.** The Discharger shall conduct routine chronic toxicity monitoring as specified in Section V.B of the Monitoring and Reporting Program (MRP) (Attachment E). The presence of chronic toxicity is defined as chronic toxicity test results that show a statistically significant difference between a control sample and a sample consisting of 100% effluent. $\alpha = 0.05$

If chronic toxicity is detected during routine sampling, the Discharger shall immediately implement accelerated chronic toxicity testing as specified in Section V.B. of the MRP.

If any of the accelerated tests demonstrate chronic toxicity, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with the requirements of Section VI.C.2.b of this Order. In accelerated testing, chronic toxicity is defined as a chronic WET test result $> 1.0 TU_c$ where

$$TU_c = 100 / NOEC$$

The NOEC is the No-Observed Effect Concentration, which is the highest concentration of effluent to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of effluent for which the values for the observed response show no statistically significant difference from a control). The NOEC shall be determined by short-term tests for *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* larval survival and growth as described in the Monitoring and Reporting Program (Attachment E).

- b. **Toxicity Identification Evaluations or Toxicity Reduction Evaluations.** By **July 4, 2008**, the Discharger shall submit to the Water Board an initial investigation Toxicity Reduction Evaluation (TRE) work plan. This plan shall generally describe the steps the Discharger intends to follow if acute or chronic toxicity is detected during accelerated acute WET testing or chronic WET testing as specified in the Monitoring and Reporting Program (Attachment E). The plan should include at least a description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency and, if a Toxicity Identification Evaluation (TIE) is necessary, an indication of the person who would conduct the TIE.

If acute or chronic toxicity is detected during accelerated acute WET testing or chronic WET testing as specified in the Monitoring and Reporting Program (Attachment E), the Discharger shall, in accordance with its initial investigation TRE work plan, initiate a TRE within 15 days of receipt of the final acute or chronic toxicity test results in order to reduce the cause(s) of toxicity. At a minimum, the Discharger shall use the USEPA manual EPA/833B-99/002 as guidance. The Discharger shall expeditiously develop and implement a more detailed TRE work plan that includes:

- 1) Further actions to investigate and identify the cause(s) of toxicity;
- 2) Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- 3) A schedule for these actions.

The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the USEPA acute and chronic manuals EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase II) as guidance.

Results of a TRE/TIE shall be submitted to the Water Board **within two months of study completion** when such a study is required based on the conditions stated above.

The Water Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

- c. **Optional Studies.** The Discharger may develop and submit to the Water Board for its consideration a translator study for copper or zinc or for both metals. Any such study shall be conducted in accordance with the requirements of the SIP and USEPA's *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (EPA-823-B-96-007). The Discharger shall submit the study plan for any such study to the Water Board Executive Officer or his/her designee to review and accept, which is required prior to initiation of the study. Upon completion of the study and submission of the study results, the Water Board may, based on the results, reopen this Order to modify the final effluent limitations for copper and zinc in accordance with the Provisions in Section VI.C.1.d of this Order.

In addition, the Discharger may conduct and submit to the Water Board for its consideration a study involving collection of additional, reliable ambient and effluent monitoring data for cyanide, bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene. The Discharger also may conduct and submit a study involving development of a water effects ratio (WER) for ammonia. The Discharger shall submit the study plan for any such study to the Water Board Executive Officer or his/her designee to review and accept, which is required prior to initiation of the study. Upon completion of the study and submission of the study results, the Water Board may, based on the results and in accordance with the Provisions in Section VI.C.1.d of this Order, reconsider the reasonable potential determinations or modify the final effluent limitations for cyanide, bis(2-ethylhexyl)phthalate, and/or dibenzo(a,h)anthracene or, subsequent to any Basin Plan amendment adopted by the Water Board and approved by USEPA, modify the final effluent limitations for ammonia,

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) when there is evidence that a priority pollutant is present in the effluent in concentrations above an effluent limitation and at least one of the conditions listed below apply.

i. A sample result is reported as "detected, but not quantified" (DNQ) and the effluent limitation is less than the Reporting Limit (RL); or

ii. A sample result is reported as "not detected" (ND) and the effluent limitation is less than the Method Detection Limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

Examples of evidence that suggest the presence of a priority pollutant include, but are not limited to:

- i. sample results reported as DNQ when the effluent limitation is less than the MDL,

- ii. sample results from analytical methods more sensitive than those methods required by this Order,
- iii. presence of whole effluent toxicity,
- iv. health advisories for fish consumption, and
- v. results of benthic organism sampling or aquatic organism tissue sampling show evidence of toxicity

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Water Board:

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Water Board including:
 - 1. All PMP monitoring results for the previous year;
 - 2. A list of potential sources of the reportable priority pollutant(s);
 - 3. A summary of all actions undertaken pursuant to the control strategy; and
 - 4. A description of actions to be taken in the following year.
- b. Best Management Practices (BMPs) for the control of industrial storm water from the site must be identified, implemented and monitored in accordance with a site specific Storm Water Pollution Prevention Plan (SWPPP) as required under the General Industrial Storm Water Permit. The Discharger has applied for coverage under this permit and is regulated under Waste Discharge Identification Number 6B36I005756.

4. Construction, Operation and Maintenance Specifications

- a. The Discharger's wastewater treatment facility shall be supervised by people who possess a wastewater treatment plant operator certificate of appropriate grade pursuant to Chapter 26, Title 23, of the California Code of Regulations.
- b. Infiltration/inflow into sewerage facilities from stormwater or nuisance water shall be minimized to the maximum extent practicable.
- c. All facilities used for collection, transportation, treatment, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
- d. Waste biosolids shall be discharged only at a legal point of disposal in accordance with the provisions of Title 27, California Code of Regulations and in accordance with 40 CFR Part 503.
- e. The California Water Code (Sections 13350 and 13385) provides that any person who violates a waste discharge requirement or a provision of the California Water Code, is subject to civil penalties stated therein.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment

- 1) The Discharger's Industrial Wastewater Pretreatment Program Plan dated January 1, 1995, including any subsequent modifications approved by the Water Board (at which time there are currently none), is hereby incorporated as a part of the proposed Order. The Discharger shall perform ongoing industrial inspections and monitoring, as necessary, to ensure compliance with pretreatment regulations contained in 40 CFR Part 403.
- 2) The Discharger shall submit an Annual Report to the Water Board describing its pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any pretreatment conditions or requirements of this Order, the Discharger shall also include the reasons for noncompliance, and state how and when the Discharger shall comply with such conditions and requirements. This Annual Report is due on **March 1** of each year and shall contain, but is not limited to, the elements identified in the Monitoring and Reporting Program (Attachment E), Section X.D.1.

b. Biosolids Disposal

- 1) Waste organic biosolids shall be discharged only at a legal point of disposal in accordance with the provisions of Title 27 of the California Code of Regulations and in accordance with 40 CFR Part 503.
- 2) By **October 4, 2008**, the Discharger shall provide a plan describing the disposal location, method, treatment, handling and disposal of biosolids that the Discharger will use. The biosolids disposal plan will be consistent with all State and Federal laws and regulations.
- 3) The Discharger shall maintain a permanent log of all solids and biosolids hauled away from the treatment facility for use or disposal elsewhere. The log shall include a summary of the volume, type (screenings, grit, raw sludge, digested sludge), use (agricultural, composting, etc.), and destination in accordance with the Monitoring and Reporting Program of this Order. Biosolids that are stockpiled at the treatment facility shall be sampled and analyzed for those constituents listed in the biosolids monitoring section of the Monitoring and Reporting Program of this Board Order and as required by Title 40, Code of Federal Regulations, Part 503. The results of the analyses should be submitted to the Water Board as part of the Monitoring and Reporting Program.
- 4) All biosolids generated at the wastewater treatment plant will be disposed, treated, or applied to land in accordance with 40 CFR 503.
- 5) Collected screenings, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner that complies with California Code of Regulations, title 27 and approved by the Water Board's Executive Officer.
- 6) The Discharger shall submit to the Water Board a copy of the annual biosolids report submitted to U.S. EPA.

c. Collection System

The Discharger's collection system is part of the system that is subject to this Order. As such, the Discharger must properly operate and maintain its collection system (40 C.F.R. § 122.41(e)). The Discharger must report any non-compliance (40 C.F.R. § 122.41(l)(6) and (7)) and mitigate any discharge from the collection system in violation of this Order (40 C.F.R. § 122.41(d)). See Attachment D, subsections I.D, V.E, V.H, and I.C. In addition, the Discharger is required to comply with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, WQO No. 2006-0003 (or current version), adopted by the State Board on May 2, 2006.

09-0034

6. Other Special Provisions

- a. Order Continuation After Expiration Date - If this Order is not revised and renewed prior to expiration, then the Order shall be continued until revised and renewed, provided that compliance with the requirements contained herein is maintained and that the Discharger has applied for renewal of the Order at least 180 prior to the expiration date.
- b. Land Ownership Change or Control - In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.
- c. Succeeding Owner or Operator - To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, Section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. Transfer shall be approved in writing by the Executive Officer.

7. Compliance Schedules

- a. **Compliance Dates.** This Order includes both Interim and Final Effluent Limitations for the discharge of zinc, cyanide, chlorodibromomethane (dibromochloromethane), dichlorobromomethane (bromodichloromethane), bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene to the Mojave River from Discharge Point 001. Compliance with the Final Effluent Limitations for these constituents is required no later than **May 18, 2010**.
- b. **Compliance Plan.** By **October 4, 2008**, the Discharger shall develop and begin implementing a Compliance Plan that identifies the measures that will be taken to reduce the concentrations of zinc, cyanide, chlorodibromomethane (dibromochloromethane), dichlorobromomethane (bromodichloromethane), bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene from Discharge Point 001. This plan must evaluate options to achieve compliance with the Final Effluent Limitations specified in Section IV.A.1.a.
- c. **Compliance Plan Annual Report.** By **March 1** of each year, the Discharger shall submit Compliance Plan Annual Reports to describe the progress of studies and or actions undertaken to reduce zinc, cyanide, chlorodibromomethane (dibromochloromethane), dichlorobromomethane (bromodichloromethane), bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene concentrations in the effluent

and achieve compliance with the Final Effluent Limitations in this Order for these constituents at Discharge Point 001 by **May 18, 2010**;

- d. **Receiving Water Monitoring.** By **June 4, 2008**, the Discharger shall propose for the Executive Officer's concurrence, an additional receiving water monitoring location RSW-003 generally as shown on Attachment B-5.

By **December 4, 2008**, the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at this location.

By **December 4, 2009**, following one year of data collection at location RSW-003, the Discharger shall propose for the Executive Officer's concurrence, an additional receiving water monitoring location RSW-004 generally as shown on Attachment B-5.

By **June 4, 2010**, the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at this location.

The Executive Officer is authorized to extend the deadlines in this section by letter as necessary to accommodate acquiring environmental permits provided VVWRA exhibits good faith to obtain them.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

A. General.

1. Compliance with Priority Pollutant Limitations

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Compliance with Total Residual Chlorine (TRC) Limitations

As noted above in Section IV.A.1.a, concentration-based effluent limitations for TRC are below the expected minimum level (ML) for this constituent. Non-compliance with a Total Residual Chlorine limitation is defined by exceeding both the limitation and the Reporting Level (RL). The Discharger must achieve the lowest possible RL for Total Residual Chlorine but, in no case, may the RL be greater than 0.1 mg/L.

B. Multiple Sample Data.

When determining compliance with an AAEL, AMEL, AWEL, or MDEL and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be

considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge (or when applicable, the median determined by subsection B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Practicable Treatment or Control (BPTC): as defined in 40 CFR 131.12(a)(2) which requires the state to assure there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources that are cost-effective. BPTC is a requirement of State Water Resources Control Board Resolution 68-16---"Statement with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that "(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained. In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution."

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the

arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ) are those sample results less than the RL but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

MPN: Most Probable Number

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including

additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

PROPOSED

ATTACHMENT B – MAPS

B-1 – AREA MAP

B-2 – FACILITY MAP

B-3 – LAYOUT OF TREATMENT FACILITIES UNDER PHASE III PRELIMINARY PLAN

B-4 – TOPOGRAPHIC MAP MONITORING STATION RSW-001

B-5 – TOPOGRAPHIC MAP MONITORING STATION RSW-002

B-6 – GEORGE AIR FORCE BASE LOWER AQUIFER SOLVENT PLUME

PROPOSED

Legend:

- Proposed Improvements: Dashed line
- Current beds/ponds: Horizontal hatching
- Proposed beds/ponds: Vertical hatching
- Monitoring Well: Circle with a cross
- Sludge Drying: Diagonal hatching
- Percolation: Stippled pattern
- Sludge Lagoon: Wavy hatching

Scale (yards): 0, 100, 200, 300

Map Labels:

- Area 60B sludge drying beds 3 & 4
- Area 60A New Digesters
- Area 50 New Equalization Basins
- Mojave River
- Mojave Discharge Point
- Wash
- Sludge Pond
- Equalization Basins
- Monitoring Wells: NZ-100, NZ, NZ-114, NZ-115, NZ-116, NZ-117, NZ-118, NZ-119, NZ-120, NZ-121, NZ-122, NZ-123, NZ-124, NZ-125, NZ-126, NZ-127, NZ-128, NZ-129, NZ-130, NZ-131, NZ-132, NZ-133, NZ-134, NZ-135, NZ-136, NZ-137, NZ-138, NZ-139, NZ-140, NZ-141, NZ-142, NZ-143, NZ-144, NZ-145, NZ-146, NZ-147, NZ-148, NZ-149, NZ-150, NZ-151, NZ-152, NZ-153, NZ-154, NZ-155, NZ-156, NZ-157, NZ-158, NZ-159, NZ-160, NZ-161, NZ-162, NZ-163, NZ-164, NZ-165, NZ-166, NZ-167, NZ-168, NZ-169, NZ-170, NZ-171, NZ-172, NZ-173, NZ-174, NZ-175, NZ-176, NZ-177, NZ-178, NZ-179, NZ-180, NZ-181, NZ-182, NZ-183, NZ-184, NZ-185, NZ-186, NZ-187, NZ-188, NZ-189, NZ-190, NZ-191, NZ-192, NZ-193, NZ-194, NZ-195, NZ-196, NZ-197, NZ-198, NZ-199, NZ-200, NZ-201, NZ-202, NZ-203, NZ-204, NZ-205, NZ-206, NZ-207, NZ-208, NZ-209, NZ-210, NZ-211, NZ-212, NZ-213, NZ-214, NZ-215, NZ-216, NZ-217, NZ-218, NZ-219, NZ-220, NZ-221, NZ-222, NZ-223, NZ-224, NZ-225, NZ-226, NZ-227, NZ-228, NZ-229, NZ-230, NZ-231, NZ-232, NZ-233, NZ-234, NZ-235, NZ-236, NZ-237, NZ-238, NZ-239, NZ-240, NZ-241, NZ-242, NZ-243, NZ-244, NZ-245, NZ-246, NZ-247, NZ-248, NZ-249, NZ-250, NZ-251, NZ-252, NZ-253, NZ-254, NZ-255, NZ-256, NZ-257, NZ-258, NZ-259, NZ-260, NZ-261, NZ-262, NZ-263, NZ-264, NZ-265, NZ-266, NZ-267, NZ-268, NZ-269, NZ-270, NZ-271, NZ-272, NZ-273, NZ-274, NZ-275, NZ-276, NZ-277, NZ-278, NZ-279, NZ-280, NZ-281, NZ-282, NZ-283, NZ-284, NZ-285, NZ-286, NZ-287, NZ-288, NZ-289, NZ-290, NZ-291, NZ-292, NZ-293, NZ-294, NZ-295, NZ-296, NZ-297, NZ-298, NZ-299, NZ-300, NZ-301, NZ-302, NZ-303, NZ-304, NZ-305, NZ-306, NZ-307, NZ-308, NZ-309, NZ-310, NZ-311, NZ-312, NZ-313, NZ-314, NZ-315, NZ-316, NZ-317, NZ-318, NZ-319, NZ-320, NZ-321, NZ-322, NZ-323, NZ-324, NZ-325, NZ-326, NZ-327, NZ-328, NZ-329, NZ-330, NZ-331, NZ-332, NZ-333, NZ-334, NZ-335, NZ-336, NZ-337, NZ-338, NZ-339, NZ-340, NZ-341, NZ-342, NZ-343, NZ-344, NZ-345, NZ-346, NZ-347, NZ-348, NZ-349, NZ-350, NZ-351, NZ-352, NZ-353, NZ-354, NZ-355, NZ-356, NZ-357, NZ-358, NZ-359, NZ-360, NZ-361, NZ-362, NZ-363, NZ-364, NZ-365, NZ-366, NZ-367, NZ-368, NZ-369, NZ-370, NZ-371, NZ-372, NZ-373, NZ-374, NZ-375, NZ-376, NZ-377, NZ-378, NZ-379, NZ-380, NZ-381, NZ-382, NZ-383, NZ-384, NZ-385, NZ-386, NZ-387, NZ-388, NZ-389, NZ-390, NZ-391, NZ-392, NZ-393, NZ-394, NZ-395, NZ-396, NZ-397, NZ-398, NZ-399, NZ-400, NZ-401, NZ-402, NZ-403, NZ-404, NZ-405, NZ-406, NZ-407, NZ-408, NZ-409, NZ-410, NZ-411, NZ-412, NZ-413, NZ-414, NZ-415, NZ-416, NZ-417, NZ-418, NZ-419, NZ-420, NZ-421, NZ-422, NZ-423, NZ-424, NZ-425, NZ-426, NZ-427, NZ-428, NZ-429, NZ-430, NZ-431, NZ-432, NZ-433, NZ-434, NZ-435, NZ-436, NZ-437, NZ-438, NZ-439, NZ-440, NZ-441, NZ-442, NZ-443, NZ-444, NZ-445, NZ-446, NZ-447, NZ-448, NZ-449, NZ-450, NZ-451, NZ-452, NZ-453, NZ-454, NZ-455, NZ-456, NZ-457, NZ-458, NZ-459, NZ-460, NZ-461, NZ-462, NZ-463, NZ-464, NZ-465, NZ-466, NZ-467, NZ-468, NZ-469, NZ-470, NZ-471, NZ-472, NZ-473, NZ-474, NZ-475, NZ-476, NZ-477, NZ-478, NZ-479, NZ-480, NZ-481, NZ-482, NZ-483, NZ-484, NZ-485, NZ-486, NZ-487, NZ-488, NZ-489, NZ-490, NZ-491, NZ-492, NZ-493, NZ-494, NZ-495, NZ-496, NZ-497, NZ-498, NZ-499, NZ-500, NZ-501, NZ-502, NZ-503, NZ-504, NZ-505, NZ-506, NZ-507, NZ-508, NZ-509, NZ-510, NZ-511, NZ-512, NZ-513, NZ-514, NZ-515, NZ-516, NZ-517, NZ-518, NZ-519, NZ-520, NZ-521, NZ-522, NZ-523, NZ-524, NZ-525, NZ-526, NZ-527, NZ-528, NZ-529, NZ-530, NZ-531, NZ-532, NZ-533, NZ-534, NZ-535, NZ-536, NZ-537, NZ-538, NZ-539, NZ-540, NZ-541, NZ-542, NZ-543, NZ-544, NZ-545, NZ-546, NZ-547, NZ-548, NZ-549, NZ-550, NZ-551, NZ-552, NZ-553, NZ-554, NZ-555, NZ-556, NZ-557, NZ-558, NZ-559, NZ-560, NZ-561, NZ-562, NZ-563, NZ-564, NZ-565, NZ-566, NZ-567, NZ-568, NZ-569, NZ-570, NZ-571, NZ-572, NZ-573, NZ-574, NZ-575, NZ-576, NZ-577, NZ-578, NZ-579, NZ-580, NZ-581, NZ-582, NZ-583, NZ-584, NZ-585, NZ-586, NZ-587, NZ-588, NZ-589, NZ-590, NZ-591, NZ-592, NZ-593, NZ-594, NZ-595, NZ-596, NZ-597, NZ-598, NZ-599, NZ-600, NZ-601, NZ-602, NZ-603, NZ-604, NZ-605, NZ-606, NZ-607, NZ-608, NZ-609, NZ-610, NZ-611, NZ-612, NZ-613, NZ-614, NZ-615, NZ-616, NZ-617, NZ-618, NZ-619, NZ-620, NZ-621, NZ-622, NZ-623, NZ-624, NZ-625, NZ-626, NZ-627, NZ-628, NZ-629, NZ-630, NZ-631, NZ-632, NZ-633, NZ-634, NZ-635, NZ-636, NZ-637, NZ-638, NZ-639, NZ-640, NZ-641, NZ-642, NZ-643, NZ-644, NZ-645, NZ-646, NZ-647, NZ-648, NZ-649, NZ-650, NZ-651, NZ-652, NZ-653, NZ-654, NZ-655, NZ-656, NZ-657, NZ-658, NZ-659, NZ-660, NZ-661, NZ-662, NZ-663, NZ-664, NZ-665, NZ-666, NZ-667, NZ-668, NZ-669, NZ-670, NZ-671, NZ-672, NZ-673, NZ-674, NZ-675, NZ-676, NZ-677, NZ-678, NZ-679, NZ-680, NZ-681, NZ-682, NZ-683, NZ-684, NZ-685, NZ-686, NZ-687, NZ-688, NZ-689, NZ-690, NZ-691, NZ-692, NZ-693, NZ-694, NZ-695, NZ-696, NZ-697, NZ-698, NZ-699, NZ-700, NZ-701, NZ-702, NZ-703, NZ-704, NZ-705, NZ-706, NZ-707, NZ-708, NZ-709, NZ-710, NZ-711, NZ-712, NZ-713, NZ-714, NZ-715, NZ-716, NZ-717, NZ-718, NZ-719, NZ-720, NZ-721, NZ-722, NZ-723, NZ-72

[illegible]

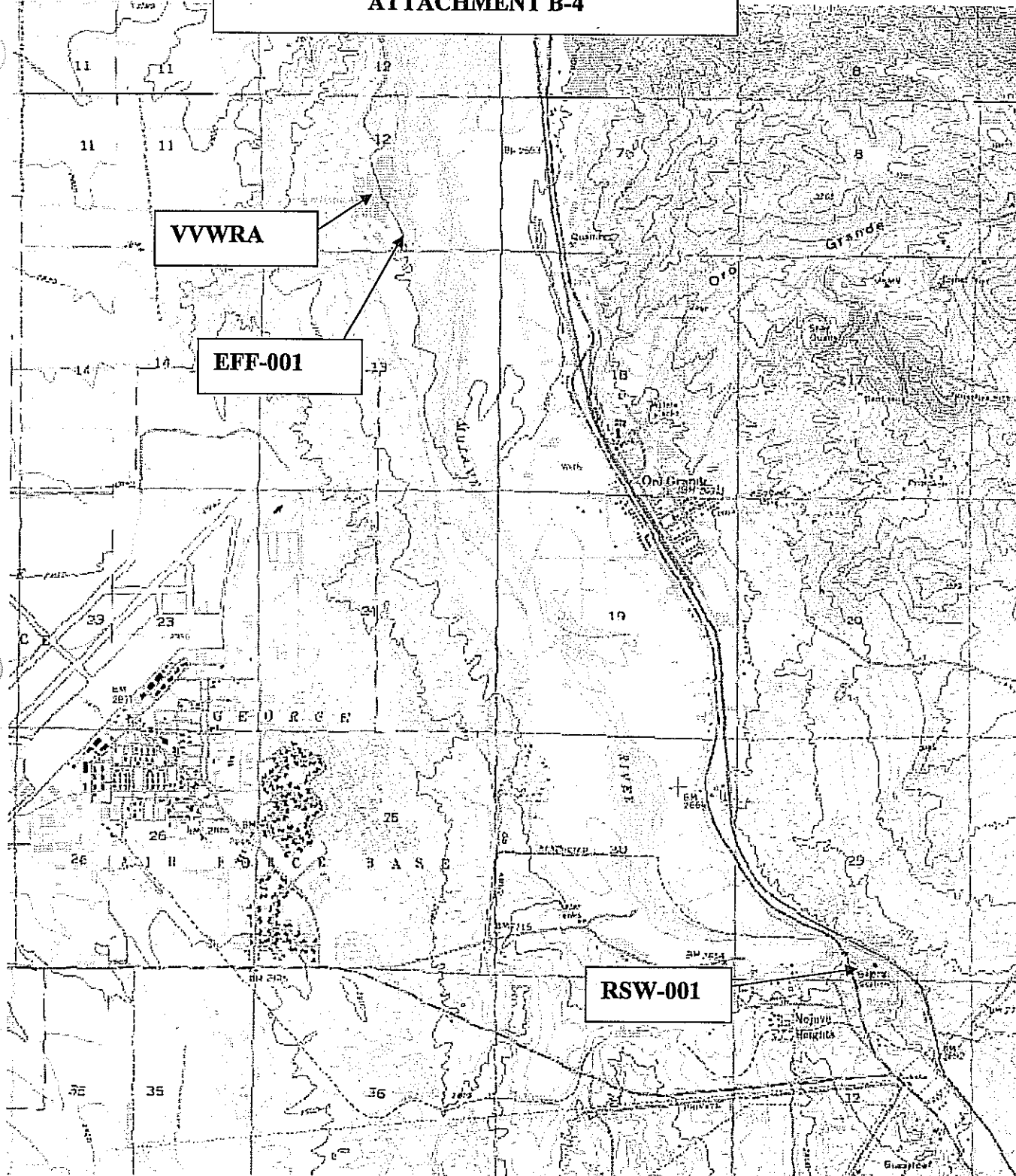
[illegible]

ATTACHMENT B-3

Attachment B-3 is replaced with Attachments C-4 through C-6.

PROPOSED

ATTACHMENT B-4



0 0.6 1.2 1.8 2.4 3 km
0 0.4 0.8 1.2 1.6 2 mi
Map center is 34° 35.69'N, 117° 20.78'W (WGS84/NAD83)
VICTORVILLE quadrangle
Projection is UTM Zone 11 NAD83 Datum

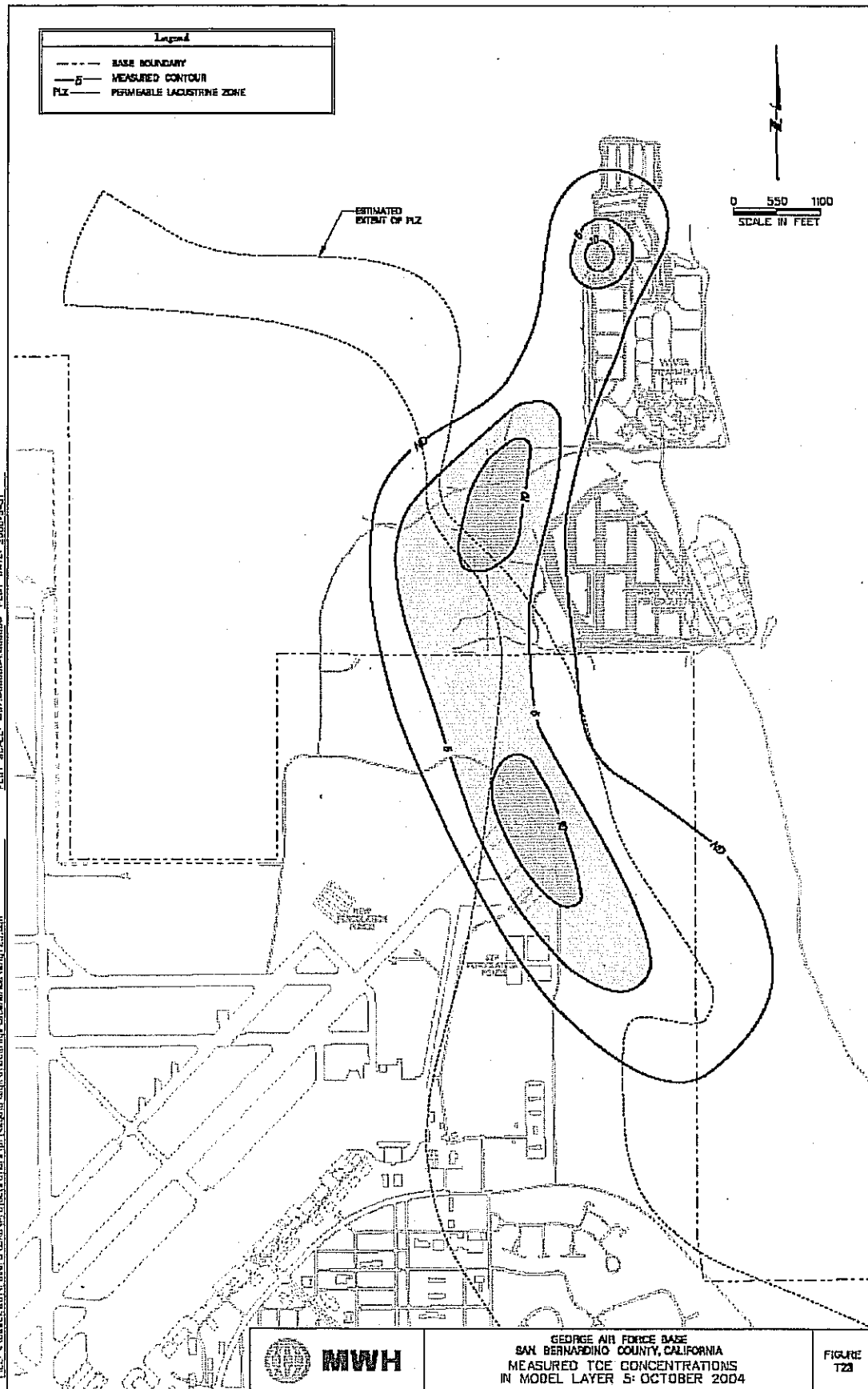
M=13.481
G=-0.197

[illegible]

Projection is UTM Zone 11 NAD83 Datum

M=13.489
G=-0.201

ATTACHMENT B-6



ATTACHMENT C – WASTEWATER FLOW SCHEMATIC

C-1 – FLOW DIAGRAM FOR 14.5-MGD AND 18-MGD UPGRADES

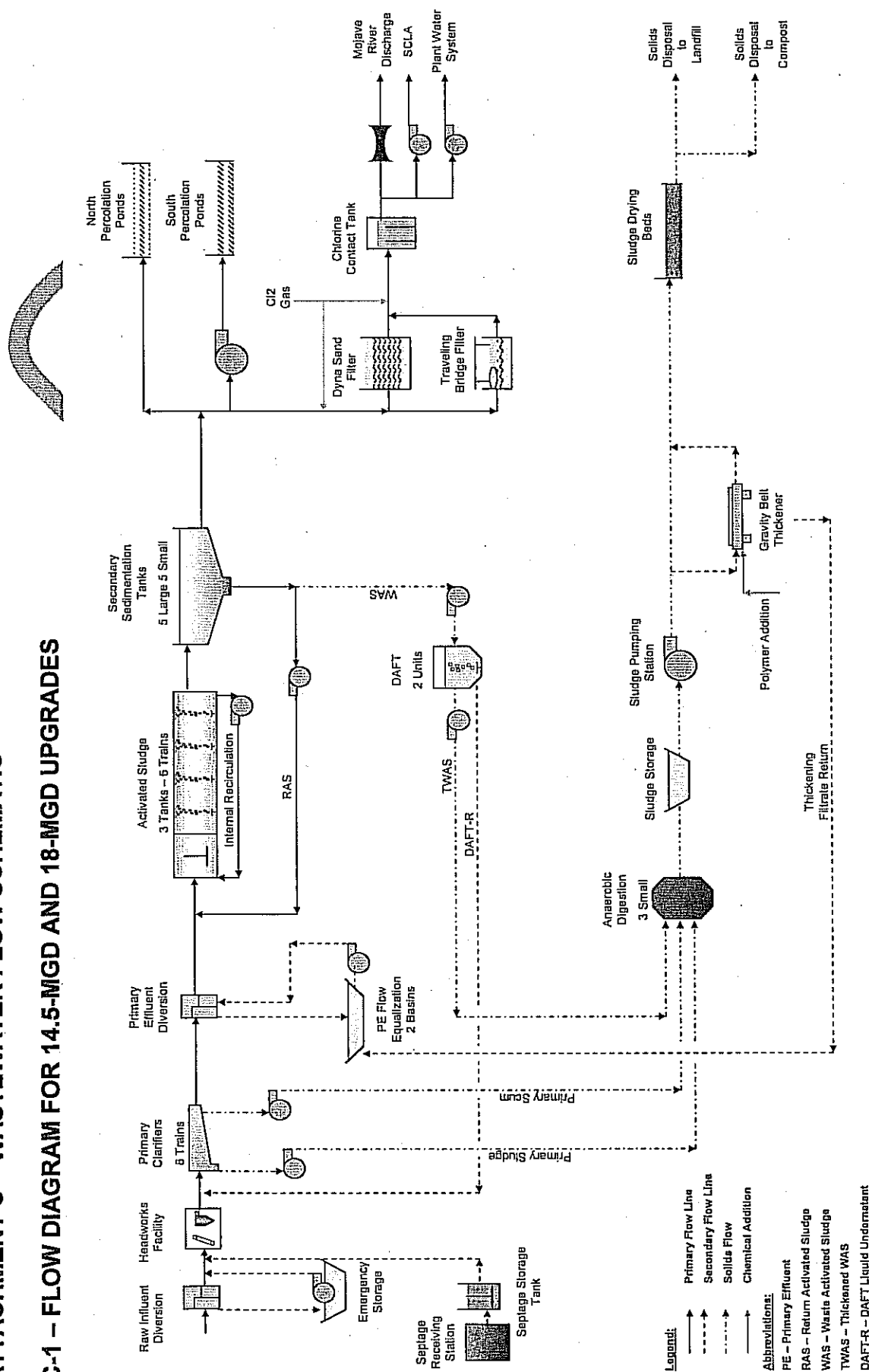


Figure 1.1 – VVWRA Existing Process Schematic (18 MGD Designed Flow - Operation From Present to Dec 2009)

Attachment C – Wastewater Flow Schematic

09-0051

C-2 – PHASE III-A EXPANSION

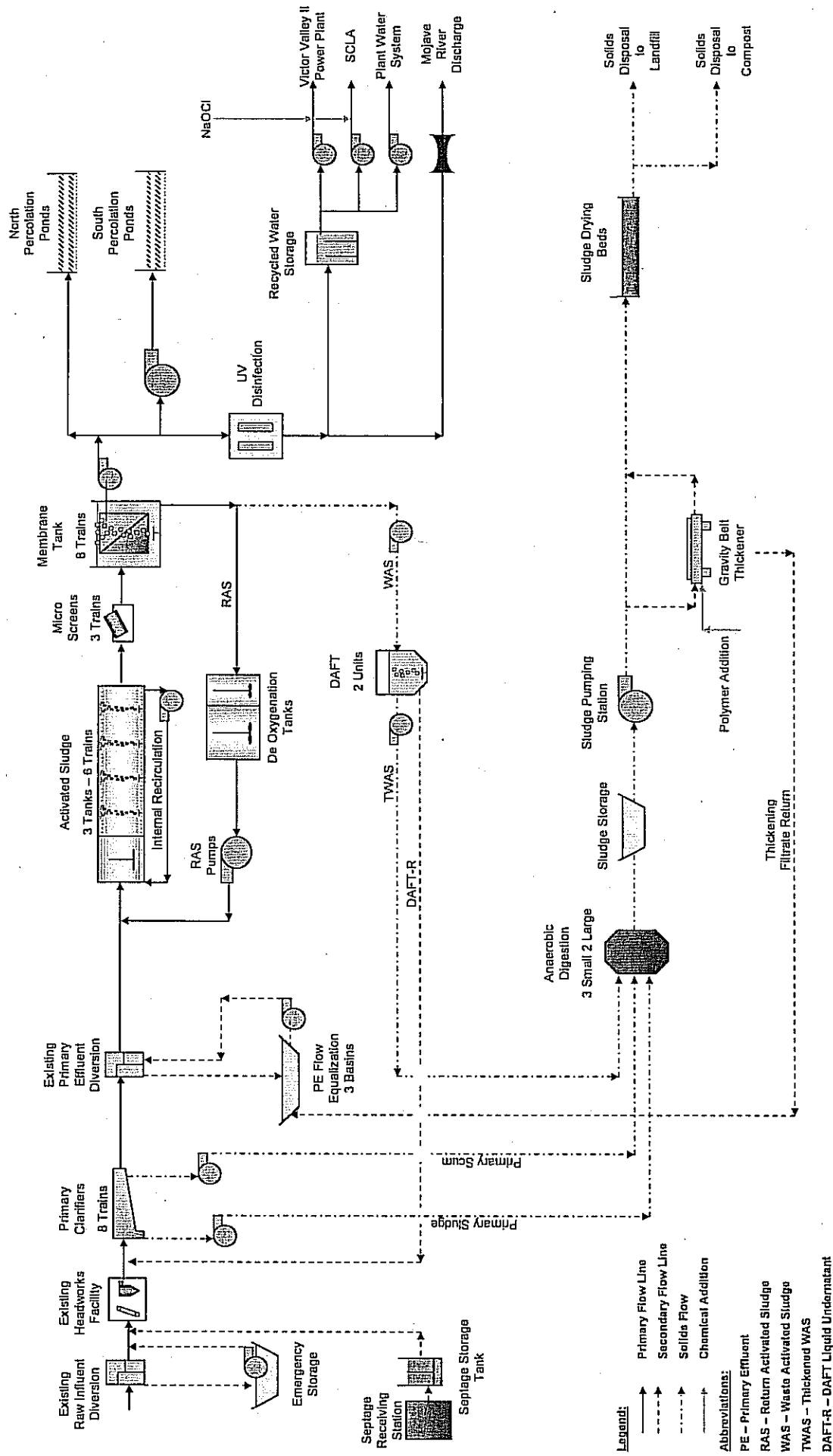


Figure 1.2 – VWRA Phase IIIA Process Schematic (18 MGD Projected Flow - Operation from Jan 2010 to April 2011)

Attachment C – Wastewater Flow Schematic

C-3 -- VVWRA PHASE III-B EXPANSION, N/dN MBR PROCESS FLOW DIAGRAM

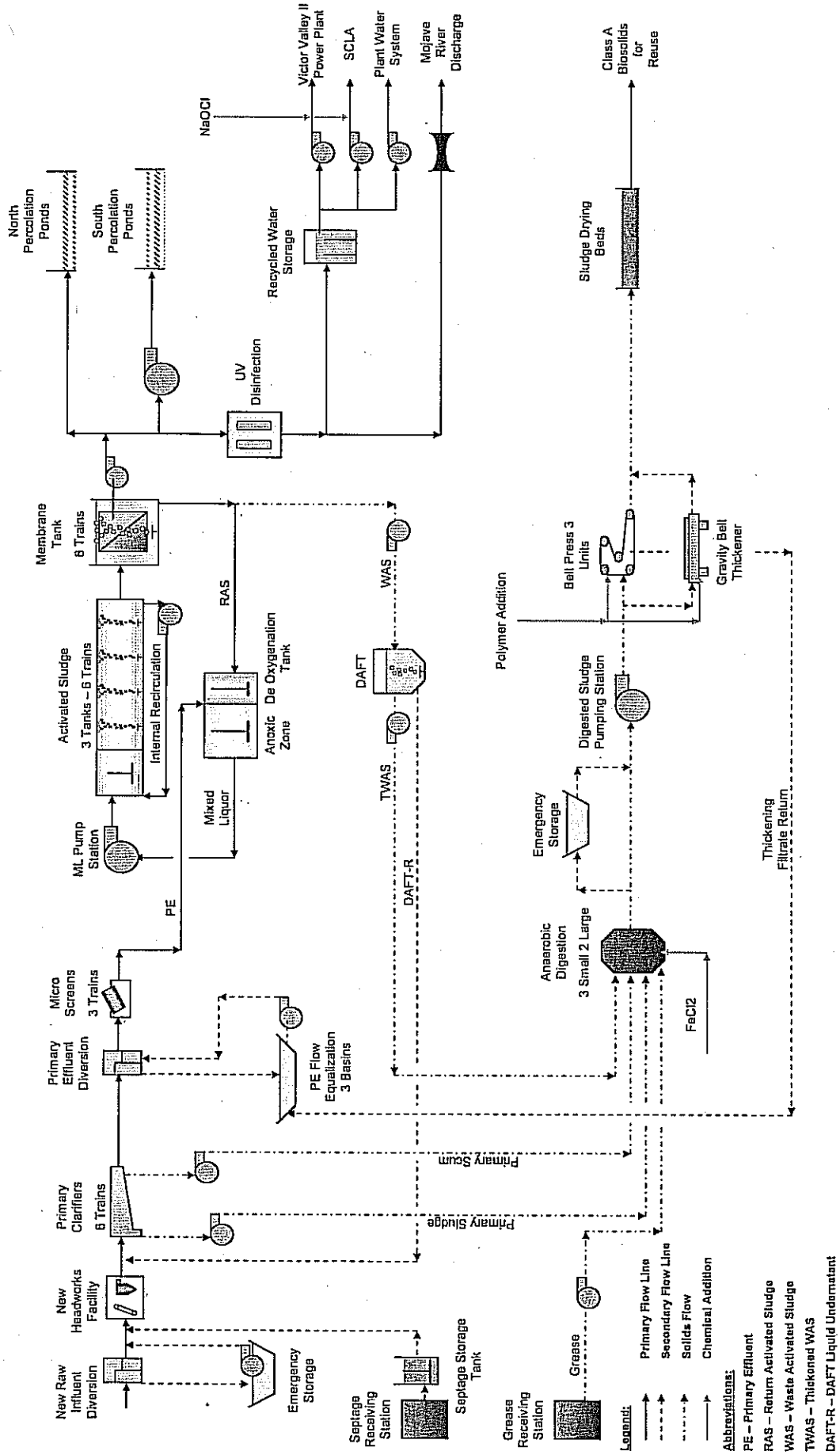
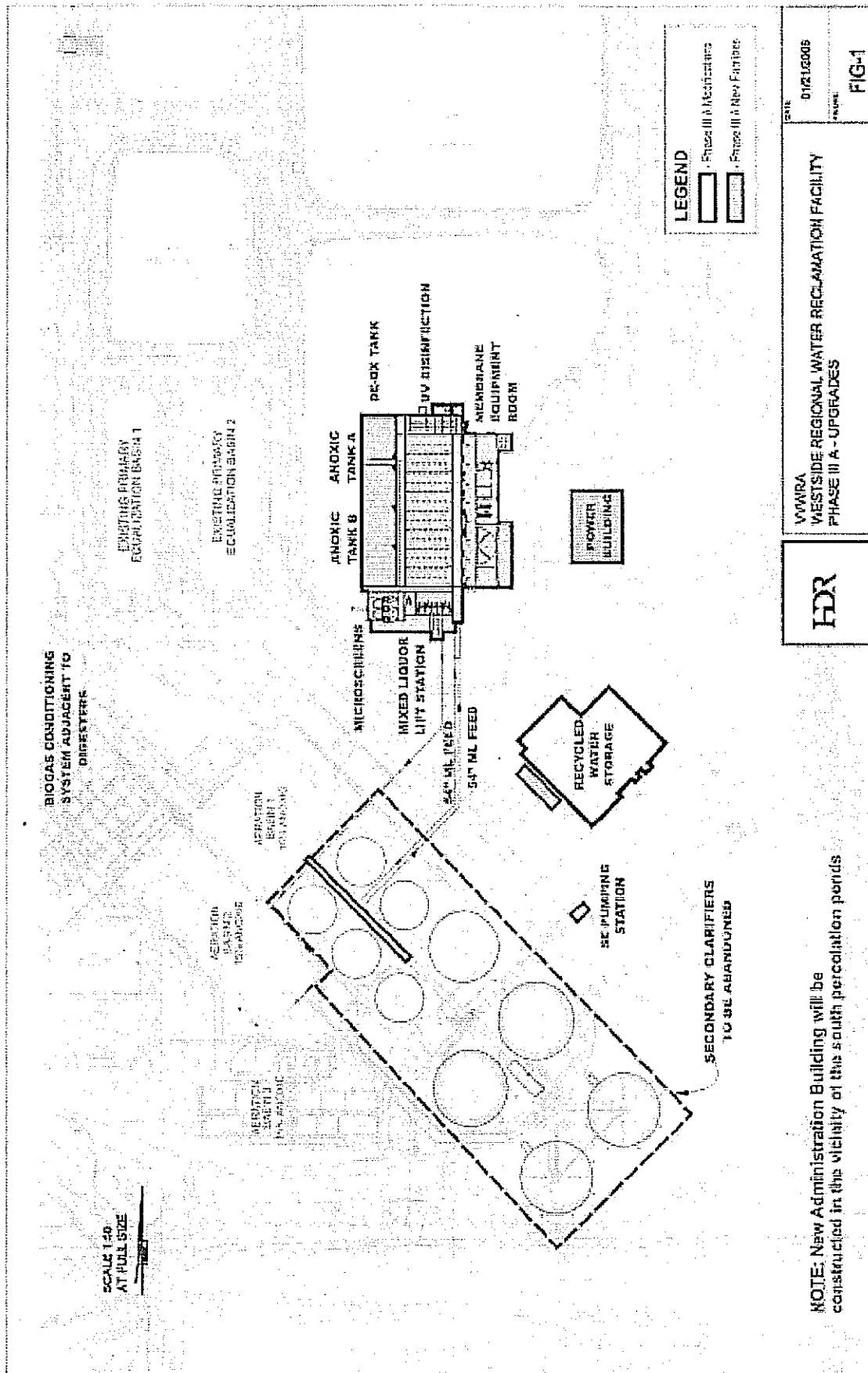


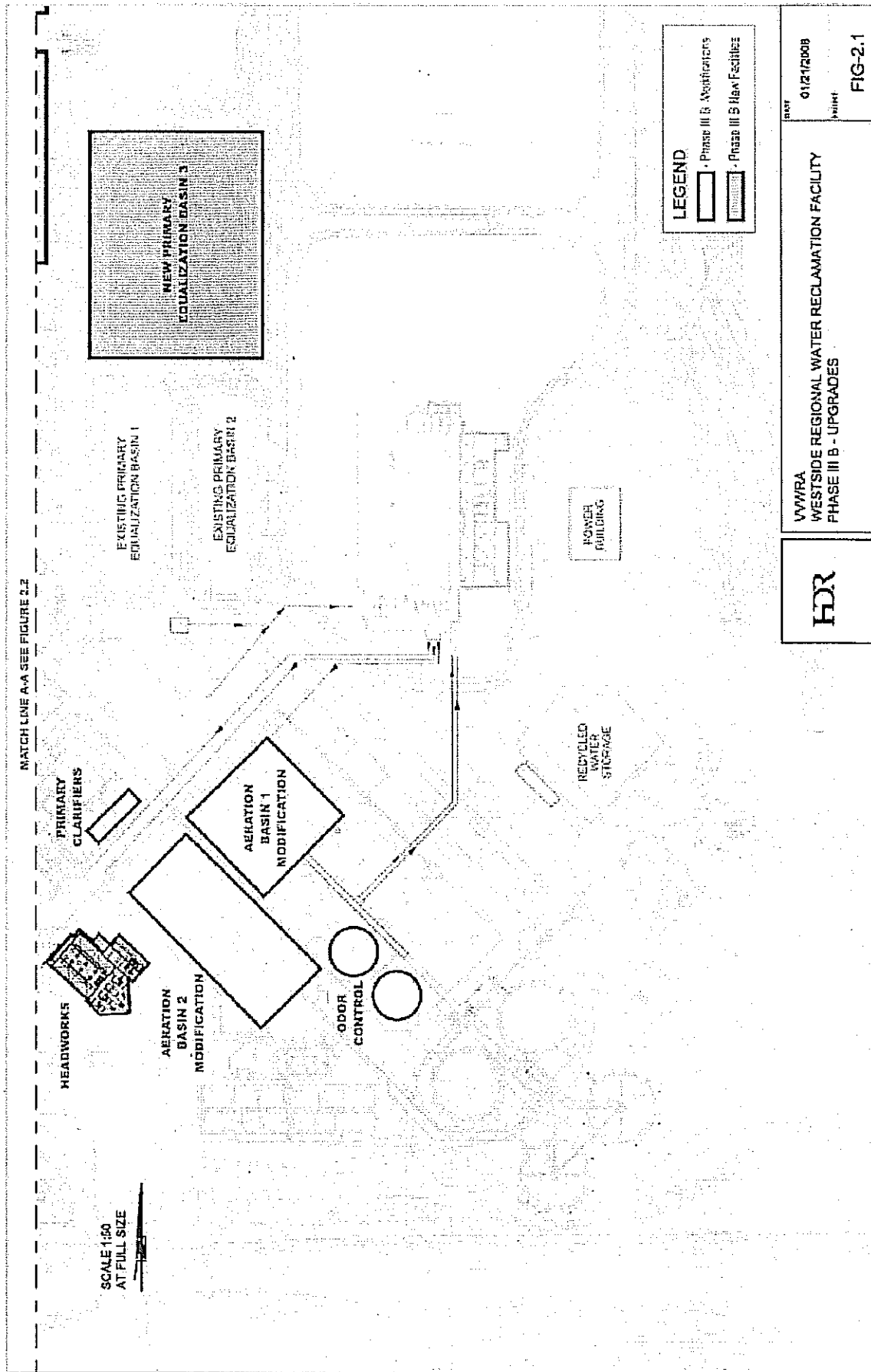
Figure 1.3 -- VVWRA Phase IIB Process Schematic (22 MGD Projected Flow - Operation from May 2011)

C-4 -- VVWRA PHASE III-A COMPONENTS



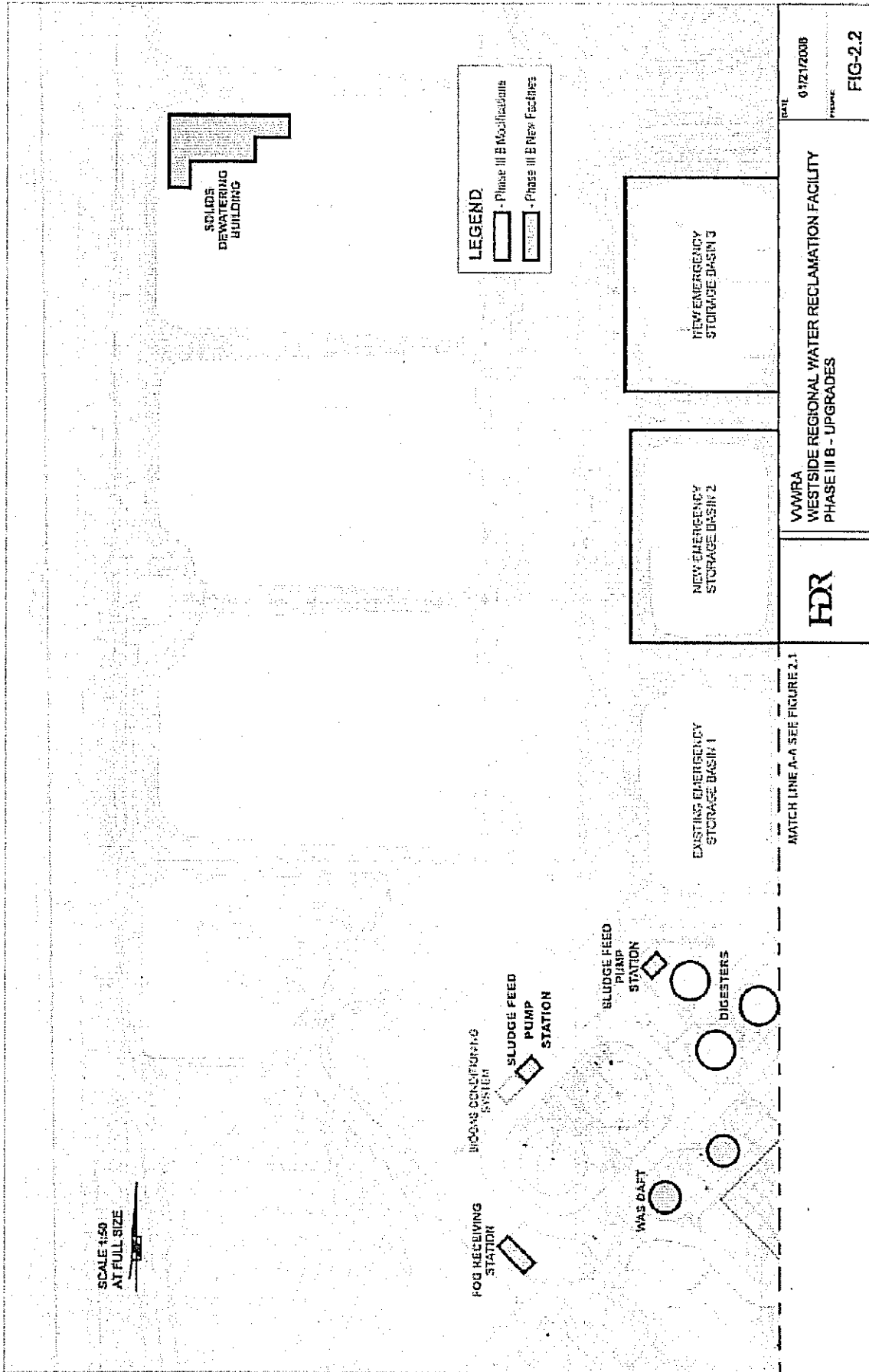
Attachment C – Wastewater Flow Schematic

C-5 - VVWRA PHASE III-B COMPONENTS



09-0055

C-6 -- VVWRA PHASE III-B COMPONENTS



09-0056

ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

09-0057

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Water Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Water Board may approve an anticipated bypass, after considering its adverse effects, if the Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Water Board. The Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Water Board, State Water Board, or USEPA within a reasonable time, any information which the Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Water Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) and in Section VI.C of this Order. (40 C.F.R. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)), or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

Attachment E – Monitoring and Reporting Program (MRP)	63
I. General Monitoring Provisions	63
II. Monitoring Locations	64
III. Influent Monitoring Requirements	65
A. Monitoring Location INF-001	65
IV. Effluent Monitoring Requirements	65
A. Monitoring Location EFF-001	65
V. Whole Effluent Toxicity Testing Requirements	68
A. Acute WET Testing – Monitoring Location EFF-001	68
B. Chronic WET Testing – Monitoring Location EFF-001	68
VI. Land Discharge Monitoring Requirements – Not Applicable (See Order No. 6-99-58)	70
VII. Reclamation Monitoring Requirements – Not Applicable (See Order No. 6-99-58 and Order No. R6V-2003-28)	70
VIII. GROUND WATER MONITORING	70
IX. Receiving Water Monitoring Requirements – Surface Water	71
A. Surface Water–Monitoring Locations RSW-001, RSW-002, RSW-003, RSW-004	71
B. Chronic Aquatic Toxicity Testing – Monitoring Location RSW-003 (RSW-002 until station RSW-003 established)	72
X. Other Monitoring Requirements	72
A. Flow Monitoring – Monitoring Locations INF-001 and EFF-001	72
B. Fecal Coliform – Monitoring Location EFF-001	73
C. Total Coliform – Monitoring Location EFF-001	73
D. Turbidity – Monitoring Location EFF-001	73
XI. Reporting Requirements	73
A. General Monitoring and Reporting Requirements	73
B. Self Monitoring Reports (SMRs)	73
C. Discharge Monitoring Reports (DMRs)	76
D. Other Reports	76

List of Tables

Table 1. Monitoring Station Locations	64
Table 2. Influent Monitoring	65
Table 3. Effluent Monitoring	66
Table 4. Receiving Water Monitoring Requirements – Surface Water	71
Table 5. Monitoring Periods and Reporting Schedule	74
Table 6. Biosolids Monitoring Requirements	79

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations at section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Water Board.
- B.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.
- C.** Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- D.** All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table 1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	INF-001 I	At the headworks, prior to the primary clarifiers. N 34° 37.031, W 117° 21.490
	INF-002	Up stream of the headworks and septage station. N 34° 36.710 W 117° 21.400 This location not currently in use.
	INF-003	New influent sample location to be determined after construction of proposed headworks
001	EFF-001	At the sample box prior to the Parshall Flume, 34° 37.019, W 117° 21.292
--	RSW-001	Upstream of Old National Trails Bridge on Rt. 66, near the USGS Gaging Station, N 34° 34.367, W 117° 19.220
--	RSW-002	1.75 miles downstream of confluence of effluent with the Mojave River at a point west of the intersection of Robertson Ranch Road and National Trails Highway), N 34° 38.447, W 117° 21.407
	RSW-003	Intermediate location between the point of discharge to the Mojave River and RSW-002 (exact location to be proposed by the Discharger and approved by the Water Board EO)
	RSW-004	Intermediate location between the point of discharge to the Mojave River and RSW-002 (exact location to be proposed by the Discharger and approved by the Water Board EO)
--	BIO-001	Report biosolids drying bed selected for annual monitoring

GPS coordinates collected with a Garmin Etrex Vista GPS hand held receiver. Coordinate system was WGS 84. NAD83

09-0068

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the facility at INF-001 as follows:

Table 2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hour composite	4/week ¹	40 CFR Part 136 Methods
Total Suspended Solids (TSS)	mg/L	24-hour composite	4/week ²	40 CFR Part 136 Methods
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Flow	Mgd	Measure	1/day	See General Monitoring Provisions (Section I)
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Conductivity	µmhos/cm	Continuous	1/day	40 CFR Part 136 Methods
pH	standard units	Continuous	1/day	40 CFR Part 136 Methods

¹ Conducted at approximately the same time as effluent monitoring for BOD (5-day @ 20°C).

² Conducted at approximately the same time as effluent monitoring for TSS.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor effluent discharged to the Mojave River at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table 3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹ and (Minimum Level, units)
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hour composite	4/week	40 CFR Part 136 Methods
Biochemical Oxygen Demand (BOD) (5-day @ 20°C), Percent Removal	% (percent)	Calculate	4/week	
Fecal Coliform ²	MPN/100 mL	Grab	5 evenly spaced in one 30-day period/yr	40 CFR Part 136 Methods
Oil and Grease	mg/L	Grab	1/quarter	40 CFR Part 136 Methods
pH	standard units	Continuous	1/day	40 CFR Part 136 Methods
Conductivity	µmhos/cm	Grab	1/day	40 CFR Part 136 Methods
Total Suspended Solids (TSS)	mg/L	24-hour composite	4/week	40 CFR Part 136 Methods
Total Suspended Solids (TSS), Percent Removal	% (percent)	Calculate	4/week	--
Priority Pollutants				
Copper, Total Recoverable	µg/L, lbs/day ³	Grab	1/month	GFAA (ML= 5 µg/L);or ICP (ML = 10 µg/L);or ICPMS (ML= 0.5 µg/L);or SPGFAA (ML = 2 µg/L)
Zinc, Total Recoverable	µg/L, lbs/day ³	Grab	1/month	FAA (ML= 20 µg/L);or ICP (ML = 20 µg/L);or ICPMS (ML= 1 µg/L);or SPGFAA (ML = 10 µg/L)
Cyanide, Total (as CN)	µg/L, lbs/day ³	Grab	1/month	COLOR (ML = 5)
Chlorodibromomethane (Dibromochloromethane)	µg/L, lbs/day ³	Grab	1/month	GC (ML = 0.5)
Dichlorobromomethane (Bromodichloromethane)	µg/L, lbs/day ³	Grab	1/month	GC (ML = 0.5)
Bis(2-ethylhexyl)phthalate	µg/L, lbs/day ³	Grab	1/month	GCMS (ML = 5)
Dibenzo(a,h)anthracene	µg/L, lbs/day ³	Grab	1/month	LC (ML = 0.1)
Remaining CTR Priority Pollutants	µg/L	Grab	1/year	40 CFR Part 136 Methods
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Boron, Total Recoverable	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Chloride	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Chlorine, Total Residual	mg/L, lbs/day ³	Grab	1/month	40 CFR Part 136 Methods
Dissolved Oxygen	mg/L	Grab	1/week	40 CFR Part 136 Methods
Fluoride, Total	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Flow	mgd	Measure	1/day	See General Monitoring Provisions (Section I)
Hardness, Total (as CaCO ₃) ⁴	mg/L	Grab	1/quarter	40 CFR Part 136 Methods
Methylene Blue Active Substances (MBAS)	mg/L, lbs/day ³	24-hour composite	1/month	Method approved by Executive Officer

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹ and (Minimum Level, units)
Nitrate Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Nitrite Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Sodium, Total	mg/L, lbs/day ³	Grab	1/month	40 CFR Part 136 Methods
Sulfate, Total (as SO ₄)	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Temperature	°C	Grab	1/week	40 CFR Part 136 Methods
Total Coliform ²	MPN/100 mL	Grab	1/day	40 CFR Part 136 Methods
Total Dissolved Solids (TDS)	mg/L, lbs/day ³	24-hour composite	1/month	40 CFR Part 136 Methods
Total Kjeldahl Nitrogen (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Turbidity	NTU	Measure	1/day	40 CFR Part 136 Methods
Whole Effluent Toxicity, Acute	See Section V.A below			
Whole Effluent Toxicity, Chronic	See Section V.B below			

¹ Where more than one approved method is available, the Discharger shall ensure that, where possible, the method detection limit (MDL) and the minimum level (ML) are less than the most stringent effluent limitation. Where the most stringent effluent limitation is less than the MDL for all approved methods, the Discharger shall select the method with the lowest MDL. Where no 40 CFR Part 136 method is available, the Discharger shall use a method approved by the Executive Officer. For Priority Pollutants where test methods are specified in the table above, the methods are as follows:

- GC = Gas Chromatography
- CGMS = Gas Chromatography/Mass Spectroscopy
- LC = High Pressure Liquid Chromatography
- GFAA = Graphite Furnace Atomic Absorption
- SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption
- ICP = Inductively Coupled Plasma
- ICPMS = Inductively Coupled Plasma/Mass Spectroscopy
- COLOR = Colorimetric

² Based on 2007 data for total coliform included with the January 22, 2008 memorandum from Gina Cloutier, VVWRA Laboratory Supervisor, included with the VVWRA letter dated January 23, 2008, the total coliform MPN measurements show that the fecal coliform effluent limitations were not exceeded for the entire year. Therefore, fecal coliform monitoring is reduced to a minimum five samples evenly spaced in any 30-day period per year. Water Board staff finds it is acceptable for VVWRA to use its in-house laboratory to analyze fecal coliform until Department of Health Services certification of this consultant is completed, expected for November 2008. Until such certification is obtained, VVWRA shall report the status of certification with each fecal coliform sample result submitted, until certification is obtained.

³ The mass emission (in lbs/day) for the regulated pollutants in the discharge shall be calculated and reported using the limitation concentration and the actual flow rate measured at the time of discharge and the formula:

$$m = 8.34 C_i Q$$

where: m = mass discharge for a pollutant, lbs/day
C_i = concentration for a pollutant, mg/L
Q = actual discharge flow rate, mgd

⁴ Hardness shall be measured concurrently with total recoverable copper and total recoverable zinc.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute WET Testing – Monitoring Location EFF-001

1. The presence of acute toxicity shall be determined as specified in USEPA's acute toxicity test methods in 40 CFR Part 136 for the *Pimephales promelas* survival test.
2. The discharger shall conduct acute WET tests on grab samples of undiluted effluent and an appropriate control water, as specified in the test method, a minimum of once per calendar quarter.
3. Where possible, the Discharger shall perform both acute WET testing and chemical-specific testing for parameters limited by this Order for which a grab sample is required using a split sample.
4. Acute WET results shall be reported in percent survival.
5. Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).
6. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in the test methods manual, the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
7. The Discharger shall submit with the monthly report in which WET test results are due, a full report of acute WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
8. If survival is less than 90 percent in two consecutive quarterly samples, the discharger shall increase the frequency of acute WET testing to one time per month. When three consecutive monthly tests demonstrate a survival rate of greater than 90 percent of the test organisms, the Discharger may resume acute WET testing at a frequency of one time per calendar quarter.
9. If any of the accelerated (monthly) tests demonstrate a survival rate of less than 70 percent, the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of Section VI.C.2 of the Order

B. Chronic WET Testing – Monitoring Location EFF-001

1. The presence of chronic toxicity shall be determined as specified in USEPA's short-term chronic toxicity test methods in 40 CFR Part 136 for *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* larval survival and growth.
2. The discharger shall conduct chronic WET tests on undiluted (100% effluent) grab samples a minimum of once per calendar year and shall use an appropriate control water, as specified in the test method.

3. Where possible, the Discharger shall perform both chronic WET testing and chemical-specific testing for parameters limited by this Order for which a grab sample is required using a split sample.
4. For routine testing, Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between control and effluent data are significant.
5. If a chronic toxicity test indicates a statistically significant difference between a sample of 100% effluent and a control, the discharger shall initiate accelerated chronic WET testing at a frequency of one time per month.
6. Accelerated chronic WET results shall be reported in TU_c where:

$$TU_c = \frac{100}{NOEC}$$

NOEC = No Observed Effect Concentration, the highest concentration of effluent to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of effluent to which the values for the observed response show no statistically significant difference from a control).

Accelerated chronic WET testing shall use a series of five dilutions and a control. The dilutions shall be 12.5, 25, 50, 75, and 100 percent effluent, along with the control (0 percent effluent). Concurrent testing with reference toxicants shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).

7. When three consecutive accelerated monthly tests demonstrate no chronic toxicity, which is defined as WET test results not exceeding 1.0 TU_c , the Discharger may resume routine chronic WET testing at a frequency of one time per calendar year.
8. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in the test methods manual, the Discharger must re-sample and re-test within 14 days of receiving the results of the failed test.
9. The Discharger shall submit with the monthly report in which WET test results are due, a full report of chronic WET testing that includes: (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; and (3) the flow rate at the time of sample collection.
10. If any of the accelerated (monthly) tests demonstrate chronic toxicity ($TU_c > 1.0$), the Discharger shall initiate a Toxicity Reduction Evaluation in accordance with the requirements of Section VI.C.2 of the Order.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE (SEE ORDER NO. 6-99-58)

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE (SEE ORDER NO. 6-99-58 AND ORDER NO. R6V-2003-28)

VIII. GROUND WATER MONITORING

Groundwater Wells

When data are collected by the discharger from any groundwater monitoring well(s), the results shall be reported in the next self monitoring report submitted. Existing wells are:

OW-1
NW-1
NW-2
NW-3
OW-6
SP-1
SP-2
SP-3
SP-4
LW-1
LW-2
LW-3
LW-4

IX. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Surface Water–Monitoring Locations RSW-001, RSW-002, RSW-003, RSW-004

1. The Discharger shall monitor **surface water** at locations **RSW-001, RSW-002, RSW-003, and RSW-004** as follows:

Table 4. Receiving Water Monitoring Requirements – Surface Water

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Boron, Total Recoverable	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Chloride	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Chlorine, Total Residual	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Dissolved Oxygen	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Fluoride, Total	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Hardness, Total (CaCO ₃)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Haloacetic Acids, Total	µg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrate Nitrogen, Total (as NO ₃)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrite Nitrogen, Total (as NO ₂)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Orthophosphate (as P)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Sulfate, Total (as SO ₄)	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Temperature	°F	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Total Coliform	MPN/100 mL	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Trihalomethane, Total	µg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Turbidity	NTU	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer

B. Chronic Aquatic Toxicity Testing – Monitoring Location RSW-003 (RSW-002 until station RSW-003 established)

1. A minimum frequency of once per calendar year, the Discharger shall determine the presence of chronic toxicity in the receiving water downstream of the discharge as specified in USEPA's short-term chronic toxicity test methods in 40 CFR Part 136 for *Ceriodaphnia dubia* survival and reproduction and *Pimephales promelas* larval survival and growth.
2. The discharger shall conduct chronic aquatic toxicity tests on grab samples of undiluted receiving water and a laboratory control sample.
3. Analysis of Variance (ANOVA) with $\alpha = 0.05$ shall be used to determine whether differences between the laboratory control and receiving water data are significant.
4. The Discharger shall submit with the monthly report in which aquatic toxicity test results are due, a full report of chronic aquatic toxicity testing that includes: (1) the toxicity test results and (2) the dates of sample collection and initiation of each toxicity test.

X. OTHER MONITORING REQUIREMENTS

A. Flow Monitoring – Monitoring Locations INF-001 and EFF-001

The following shall be recorded in a permanent log book and submitted monthly:

1. The volume, in million gallons, of wastewater flow to the treatment Facility for each day.
2. The total volume, in million gallons, of wastewater flow to the treatment Facility for each month.
3. The average flow rate, in million gallons per day, of wastewater to and from the treatment Facility calculated for each month.
4. The maximum instantaneous flow rate, in million gallons per day, of wastewater to the treatment Facility that occurs each day.
5. The volume, in million gallons, of wastewater flow to the Mojave River each day.
6. The total volume, in million gallons, of wastewater flow to the Mojave River for each month.
7. The average flow rate, in million gallons per day, of wastewater to the Mojave River calculated for each month.
8. The volume, in gallons, of septic tank pumpings (septage) discharged to the treatment Facility each day. Septage volume recording shall begin immediately after the first dump station becomes operational.
9. The total volume, in million gallons, of septic tank pumpings (septage) discharged to the treatment Facility each month.

B. Fecal Coliform – Monitoring Location EFF-001

The log mean MPN of fecal coliform organisms shall be determined from the last thirty days. This 30-day running log mean value shall be computed and recorded for each day of the monthly reporting period along with the results from each individual sample.

C. Total Coliform – Monitoring Location EFF-001

The median MPN of coliform organisms shall be determined for the last seven days for which coliform results have been obtained. This seven day running median value shall be computed and recorded for each day of the monthly reporting period along with the results from each individual sample.

D. Turbidity – Monitoring Location EFF-001

The average turbidity values, the percent of the time that the turbidity exceeds 5 NTU, and the number of times that the turbidity exceeds 10 NTU shall be computed and recorded each day, using the turbidity data provided by the continuous recording turbidimeter.

XI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. By **June 4, 2008**, the Discharger shall revise the Sampling and Analysis Plan (SAP) that was originally dated January 7, 2000 and submit the revision to the Water Board. The revised SAP shall reflect the requirements of this Order for sampling for all media (effluent, surface water, and groundwater leachate and biosolids). At a minimum, the SAP shall include: sampling locations, sampling schedule, sampling procedures, sample handling procedures, analytical methods, MDLs, MLs, QA/QC protocols, groundwater monitoring well purge protocols, sampling criteria methods, maps showing all monitoring points, and procedures for annual assessment of the physical integrity of each groundwater monitoring well. The Discharger shall periodically update the SAP as needed to keep it current.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through X. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly reports shall be due on the 1st day of each month. Information for a calendar month is due at the beginning of the second month following the month in which sampling occurred (e.g., 30 days after the end of the calendar month, information for that month is due). All annual reports shall be due on **March 1** following each calendar year.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table 5. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	April 5, 2008	All	Submit with monthly SMR
Daily	April 5, 2008	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Weekly or 4/week	April 6, 2008	Sunday through Saturday	Submit with monthly SMR
Monthly	May 1, 2008	1 st day of calendar month through last day of calendar month	1 st day of 2 nd month following monitoring period
Quarterly	July 1, 2008	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	Submit with SMR on 1 st day of 2 nd month following monitoring period
Semiannually	July 1, 2008	January 1 through June 30 July 1 through December 31	Submit with SMR on 1 st day of 2 nd month following monitoring period
Annually	January 1, 2009	January 1 through December 31	March 1 of each year
1 / 4 years	January 1, 2009	Permit effective date through four years following permit effective date	Submit with SMR no less than 180 days prior to permit expiration date

4. Reporting Protocols. The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Discharger shall submit SMRs in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to illustrate clearly whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. SMRs must be submitted to the Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

California Regional Water Quality Control Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

09-0079

C. Discharge Monitoring Reports (DMRs)

1. As described in Section XI.B.1 above, at any time during the term of this permit, the State or Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

State Water Resources Control Board
Discharge Monitoring Report Processing Center
Post Office Box 671
Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.
4. A copy of the DMR shall also be submitted to the Water Board's Victorville office.

D. Other Reports

1. Pretreatment Reporting

- a. The Discharger shall submit, by **March 1** of each year, an Annual Pretreatment Report to USEPA Region 9, the SWRCB and the Water Board, describing the Discharger's pretreatment activities over the previous calendar year.

- b. The Annual Report shall contain, but not be limited to, the following information:

- 1) A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the Act, which are known or suspected to be discharged by industrial users. The Discharger is not required to sample and analyze for asbestos until USEPA promulgates an applicable analytical technique under 40 CFR 136. Biosolids shall be sampled during the same 24-hour period. Wastewater and biosolids sampling and analysis shall be performed a minimum of quarterly. The Discharger shall also provided any influent, effluent, or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through, or adversely impacting biosolids quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.
- 2) A discussion of upset, interference, or pass through incidents, if any, at the POTW that the Discharger knows or suspects were caused by industrial

users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken, and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through, interference, or noncompliance with biosolids disposal requirements.

- 3) The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
 - 4) An updated list of the Discharger's industrial users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to the Federal Categorical Standards by specifying which set(s) of standards are applicable.
 - 5) The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the Federal Categorical Standards.
- c. The Discharger shall also list in the Annual Report the non-categorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status of each industrial user by employing the following descriptions:
- 1) In compliance with Baseline Monitoring Reporting requirements (where applicable);
 - 2) Consistently achieving compliance;
 - 3) Inconsistently achieving compliance;
 - 4) Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f);
 - 5) On a compliance schedule to achieve compliance (include the date final compliance is required);
 - 6) Not achieving compliance and not on a compliance schedule; and
 - 7) The Discharger does not know the industrial user's compliance status.
- d. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding industrial users. The summary shall include:
- 1) The names and addresses of the industrial users subject to surveillance by the Discharger and an explanation of whether they were inspected, sampled, or both, and the frequency of these activities for each user; and
 - 2) The conclusion or results from inspection or sampling of each industrial user.
- e. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

- 1) Warning letters or notices of violation regarding the industrial users' apparent non-compliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the Federal Categorical Standards or local discharge limitations;
 - 2) Administrative Orders regarding the industrial users' compliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned the Federal Categorical Standards or local discharge limitations.
 - 3) Civil actions regarding the industrial users' non-compliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned the Federal Categorical Standards or local discharge limitations;
 - 4) Criminal actions regarding the industrial users' non-compliance with Federal Categorical Standards or local discharge limitations. For each industrial user, identify whether the violation concerned the Federal Categorical Standards or local discharge limitations;
 - 5) Assessment of monetary penalties. For each industrial user, identify the amount of penalties;
 - 6) Restrict the flow to the POTW; or
 - 7) Disconnect from the POTW.
- f. A description of any significant changes in operating the pretreatment program that differ from the information in the Discharger's POTW Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority or enforcement policy; funding mechanisms; resource requirements; or staffing levels.
- g. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- h. A summary of public participation activities that involve and inform the public.
- i. A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report.

Quarterly reports describing the compliance status of any industrial user characterized by the descriptions in Items f (i-vii) above shall be submitted to the USEPA Region 9; the State Water Board and the Water Board. Duplicate signed copies of the above annual and quarterly reports shall be submitted to the Regional Administrator, SWRCB and the Water Board at the following addresses:

Regional Administrator
USEPA Region 9
Attention: W-5-1
75 Hawthorne Street
San Francisco, CA 94105

SWRCB
Operations Branch
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801

California Water Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

2. Biosolids Monitoring Requirements – Monitoring Location BIO-001

- a. The following shall be recorded monthly and reported with monthly monitoring reports:
 - 1) Total quantity of biosolids generated during the monitoring period.
 - 2) Date and quantity of biosolids removed off-site, location of use, recipient (including name and address) and biosolids disposal method (including crops grown if appropriate) for all biosolids removed off-site.
 - 3) Cumulative total quantity of biosolids currently on-site including the quantity of biosolids added during the monitoring period.
- b. A single biosolids drying bed shall be selected and reported and a representative sample of sewage biosolids shall be collected annually and analyzed as follows:

Table 6. Biosolids Monitoring Requirements

Constituent	Units	Sample Type	Minimum Sampling Frequency
Arsenic	mg/kg	Grab	1/Year
Cadmium	mg/kg	Grab	1/Year
Copper	mg/kg	Grab	1/Year
Lead	mg/kg	Grab	1/Year
Mercury	mg/kg	Grab	1/Year
Molybdenum	mg/kg	Grab	1/Year
Nickel	mg/kg	Grab	1/Year
Selenium	mg/kg	Grab	1/Year
Zinc	mg/kg	Grab	1/Year
Fecal Coliform	MPN/g	Grab	1/Year
Kjeldahl Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Nitrate Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Nitrite Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Ammonia Nitrogen, Total (as N)	mg/kg	Grab	1/Year
Phosphate, Total (as P)	mg/kg	Grab	1/Year

The Discharger shall also sample annually for the parameters listed in California Code of Regulations, title 22, section 66261.24, subdivision (a)(2)(A), Table II and California Code of Regulations, title 22, section 66261.24, subdivision

(a)(2)(B), Table III. The Discharger shall submit a proposed protocol for sample collection to the Executive Officer for review prior to sample collection and analysis. The Discharger shall make a determination whether the analyses indicate that the biosolids shall be considered a hazardous material.

Results of all annual sampling will be submitted with the results of all other annual monitoring requirements by **March 1** of each year.

3. Operation and Maintenance

A brief summary of any operational problems and maintenance activities shall be submitted to the Water Board with each monthly Self Monitoring Report. This summary shall discuss:

- a. Any modifications or additions to the wastewater conveyance system, treatment Facilities, or disposal facilities.
- b. Any major maintenance conducted on the wastewater conveyance system, treatment Facilities, or disposal facilities.
- c. Any major problems occurring in the wastewater conveyance system, treatment Facilities, or disposal facilities.
- d. The calibration of any wastewater flow measuring devices.

4. Offsite Disposal

The Discharger shall include in each monthly monitoring report the volume and type of all waste hauled off site for disposal. The person or company doing the hauling and the legal point of disposal shall also be recorded.

5. Annual Facility Monitoring Report

By **March 1** of each year, the Discharger shall submit an Annual Report that summarizes in tabular and graphical format the monitoring data collected for the previous year. This report shall include plant influent and effluent data and time plots of related ground and surface receiving water data. Included shall be the names and grades of all certified operators. Include also a summary of the compliance status and implement the schedule any non-compliance situation.

ATTACHMENT F – FACT SHEET

Table of Contents

ATTACHMENT F – FACT SHEET	83
I. Permit Information.....	83
II. Facility Description	84
A. Description of Wastewater and Biosolids Treatment or Controls	84
B. Discharge Points and Receiving Waters.....	90
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data	91
Discharge Point 001	91
D. Compliance Summary – Discharge Point 001	95
E. Planned Changes	97
III. Applicable Plans, Policies, and Regulations	98
A. Legal Authorities	98
B. California Environmental Quality Act (CEQA)	98
C. State and Federal Regulations, Policies, and Plans	98
D. Impaired Water Bodies on CWA 303(d) List	101
E. Other Plans, Policies and Regulations – Not Applicable	101
IV. Rationale For Effluent Limitations and Discharge Specifications	102
A. Discharge Prohibitions	102
B. Technology-Based Effluent Limitations	102
1. Scope and Authority	102
2. Applicable Technology-Based Effluent Limitations	103
C. Water Quality-Based Effluent Limitations (WQBELs)	105
1. Scope and Authority	105
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives	105
3. Determining the Need for WQBELs	105
4. WQBEL Calculations	113
5. Whole Effluent Toxicity (WET)	124
D. Final Effluent Limitations	129
E. Interim Effluent Limitations	133
V. Rationale for Receiving Water Limitations	135
A. Surface Water	135
B. Groundwater	135
VI. Rationale for Monitoring and Reporting Requirements	136
A. Influent Monitoring	136
B. Effluent Monitoring – Monitoring Location EFF-001	137
C. Land Discharge Monitoring – Not Applicable (See Order No. 6-99-58.)	140
D. Reclamation Monitoring Requirements – Not Applicable (See Order No. 6-99-58 and Order No. R6V-2003-28)	140
E. Whole Effluent Toxicity Testing Requirements	140
F. Receiving Water Monitoring	141
1. Surface Water (RSW-001; RSW-002; RSW-003; RSW-004)	141
2. Groundwater – (See Order No. 6-99-58)	143
G. Other Monitoring Requirements	143
1. Pretreatment Monitoring	143
2. Biosolids Monitoring	143

VII. Rationale for Provisions	143
A. Standard Provisions.....	143
B. Special Provisions	144
1. Reopener Provisions	144
2. Special Studies and Additional Monitoring Requirements	145
3. Best Management Practices and Pollution Prevention.....	145
4. Construction, Operation, and Maintenance Specifications	146
5. Special Provisions for Municipal Facilities (POTWs Only).....	146
6. Other Special Provisions	146
7. Compliance Schedules.....	146
VIII. Public Participation.....	147
A. Notification of Interested Parties	147
B. Written Comments	147
C. Public Hearing	147
D. Waste Discharge Requirements Petitions	148
E. Information and Copying.....	148
F. Register of Interested Persons	148
G. Additional Information	148

List of Tables

Table 1. Facility Information	83
Table 2. Discharge Points and Receiving Waters	91
Table 3. Selected Historic Effluent Limitations and Monitoring Data—Discharge Point 001	92
Table 4. Application Data for Conventional and Non-Conventional Pollutants – Discharge Point 001	93
Table 5. Application Data for Priority Pollutants – Discharge Point 001.....	94
Table 6. Application Data for Aquatic Toxicity Mojave River (Receiving Water).....	95
Table 7. Basin Plan Beneficial Uses	98
Table 8. Summary of Technology-based Effluent Limitations	104
Table 9. Summary of Reasonable Potential Analysis for CTR Pollutants Observed –Discharge Point 001	107
Table 10. Summary of Reasonable Potential Analysis for Non-CTR Pollutants – Discharge Point 001	110
Table 11. Summary of CV Used in Calculations for Non-CTR Pollutants	117
Table 12. Summary of Factors Used in WQBEL Calculations for Non-CTR Pollutants.....	124
Table 13. Summary of Water Quality-based Effluent Limitations – Discharge Point 001	127
(Based on 14.0 mgd Permitted Flow)	127
Table 14. Summary of Final Effluent Limitations – Discharge Point 001	130
(Based on 14.0 mgd Permitted Flow)	130
Table 15. Summary of Interim Effluent Limitations for CTR Pollutants.....	135
– Discharge Point 001 (Based on 14.0 mgd Permitted Flow).....	135
Table 17. Summary of Influent Monitoring Requirements	136
Table 18. Summary of Effluent Monitoring Requirements (EFF-001).....	138
Table 19. Summary of Surface Water Monitoring Requirements (RSW-001, RSW-002, RSW-003, RSW-004, RSW-005).....	142

ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Facility Information

WDID	6B360109001
Discharger	Victor Valley Wastewater Reclamation Authority
Name of Facility	Victor Valley Regional Wastewater Treatment Plant
Facility Address	20111 Shay Road
	Victorville, CA 92394
	San Bernardino County
Facility Contact, Title and Phone	Logan Olds, Plant Manager, 760-246-8638
Authorized Person to Sign and Submit Reports	Logan Olds, Plant Manager, 760-246-8638
Mailing Address	Victor Valley Wastewater Reclamation Authority 15776 Main St Ste 3 Hesperia, CA 92345
Billing Address	Victor Valley Wastewater Reclamation Authority 15776 Main St Ste 3 Hesperia, CA 92345
Type of Facility	Regional POTW
Major or Minor Facility	Major
Threat to Water Quality	Category 1
Complexity	Category A
Pretreatment Program	Y
Reclamation Requirements	Producer: VVWRA End User: Westwinds Golf Course at the Southern California Logistics Airport (SCLA) (Formerly George Air Force Base)
Facility Permitted Flow	14.0 million gallons per day (mgd) in this Order (discharge to surface water)
Facility Design Flow	14.5 (underway); 18.0 mgd (planned) and 22.0 (planned) following completion of Phase II and Phase III expansions; 14.0 mgd discharged to surface water and regulated under this Order
Watershed	Mojave River Basin
Receiving Water	Mojave River; Upper Mojave River Valley Groundwater Basin (discharge to Mojave River regulated in this Order)
Receiving Water Type	Surface Water and Groundwater

- A.** Victor Valley Wastewater Reclamation Authority (hereinafter Discharger) is the owner and operator of Victor Valley Wastewater Reclamation Facility (hereinafter Facility), a regional Publicly Owned Treatment Works (POTW).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to the Mojave River, a Water of the United States and a Water of the State, and to a series of percolation ponds. In addition, recycled water from the facility is reused onsite and for landscaping and turf irrigation at the City of Victorville Westwinds Golf Course. The Facility currently is regulated by: Order No. 6-99-58, which was adopted on November 17, 1999, and expired on November 17, 2004 and Order No. R6V-2003-028, which was adopted on June 11, 2003 and regulates recycled water used offsite. Those portions of Order No. 6-99-58 which regulate land disposal percolation ponds and recycled water used onsite remain in effect. The terms and conditions of Order No. 6-99-58 were automatically continued and remain in effect until new or revised Waste Discharge Requirements in the form of a National Pollutant Discharge Elimination System Permit are adopted in this Order..
- C.** The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on May 19, 2004. In addition, the Discharger filed subsequent Reports of Waste Discharge on June 28, 2006 and August 13, 2007 (as discussed below).
- D.** A compliance inspection was last conducted on June 11, 2007. The most recent Pretreatment Compliance Inspection was conducted on September 10, 2007. These inspections and audits were to observe operations and collect additional data used to develop effluent limitations and other requirements.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

VVWRA is a four-member joint power authority established in 1977. The treatment Facility receives wastewater from three cities (Town of Apple Valley, City of Hesperia and City of Victorville) and two San Bernardino County Service Areas (No. 42 - Oro Grande and No. 64 - Spring Valley Lakes). VVWRA also receives septage tank cleaning flow. Currently VVWRA has no restrictions on where septage comes from, but preference is given to sources within the VVWRA service area.

The Facility is in the high desert, approximately 80 miles northeast of Los Angeles. Interstate 15 passes through Victorville, which is a major transportation corridor between Southern California and Las Vegas, Nevada. The region is arid. Summer temperatures frequently exceed 100 °F, and rainfall averages 5 inches annually. Attachment B to this Order is a topographic map of the area surrounding the Facility.

The VVWRA service area includes both sewered and unsewered customers. Sewered customers discharge to the Facility through a raw sewage collection system that includes gravity sewers, sewage sump stations and sewage force mains from the City of Victorville, Spring Valley Lake (San Bernardino County Service Area No. 64), Southern California Logistics Airport (formerly George Air Force Base), Town of Apple Valley, and Oro Grande (San Bernardino County Service Area No. 42), and City of Hesperia. The permit renewal application states that VVWRA serves a population of 112,921 from these communities. Unsewered customers are on private septic tanks with leach fields.

VVWRA maintains approximately 40 miles of trunk interceptor lines that receive sewage from an approximately 216 square mile service area. The VVWRA Year 2005 Amendment to the Sewerage Facilities Plan indicates that the 2005 sewered population is 141,071 with a projected 2025 sewered population of 320,576. The 2005 wastewater influent flow averaged 2.19 mgd according to the 2005 Annual Report. The projected average flow in 2025 is 31.81 mgd based on the Year 2005 Amendment to the Sewerage Facilities Plan. In December 2005 design work began to increase the Interceptor Sewerage System Capacity. The Discharger obtained coverage for the sewer collection system under the State General Permit for Sanitary Sewers (Order 2006-0003-DWQ).

The Discharger's Facility has undergone a series of upgrades after its initial startup in 1980. The Facility was first designed with an average dry weather flow (ADWF) of 4.5 mgd. The original construction included the activated sludge process with secondary effluent discharge to percolation ponds and sludge subjected to anaerobic digestion with storage in lagoons. The Facility has gone through six upgrades since the initial construction.

The current treatment system consists, in part, of headworks, primary clarifiers, flow equalization, aeration basins, secondary clarifiers, and percolation ponds. The Facility uses the activated sludge process to provide secondary treatment and, in addition, uses gravity filters with chlorination and dechlorination to provide tertiary treatment to a portion of the wastewater. Effluent from the secondary treatment process is discharged to the percolation ponds. Effluent that receives tertiary treatment is directed to the Mojave River (after dechlorination) or is used for on and off-site irrigation and landscaping purposes or fire protection. Effluent that receives disinfected secondary-level treatment may be used for on-site dust control, construction grading, or facility washdown. Sludge is delivered to a series of sludge drying beds for solar drying. After drying the biosolids are stockpiled onsite and hauled offsite for disposal. The treatment processes are described in more detail below.

According to the permit renewal application that was submitted to the Water Board on May 19, 2004, EPA Form 2A, VVWRA proposed a design flow rate for the Facility at 11.0 mgd, with an annual average daily flow rate of 9.6 mgd. On July 26, 2004, VVWRA submitted a *Basis of Design Report: Upgrades to Regional Wastewater Reclamation Facility Project*. A supplemental report was provided on August 13, 2004 noting that the treatment and disposal capacity of the treatment Facility had reached 12.5 mgd. The Discharger is upgrading and expanding its capacity to 14.5 mgd (Phase

l) and, subsequently, to 18.0 mgd (Phase II) and 22.0 mgd (Phase III) as discussed below. On January 7, 2008, VVWRA submitted a revised NPDES permit application and *Addendum to Anti-degradation Analysis for Expansion of the Regional Wastewater Treatment Plant, River Discharge* proposing an increased Mojave River discharge to 14 mgd when the Phase III-A expansion is complete. When Phase III-B is completed the facility will have an overall capacity of 22 mgd, but Mojave River discharges will be limited to 14 mgd.

Headworks

Raw wastewater is first metered through a structure equipped with a magnetic flow meter. Wet weather flows in excess of 21 mgd are diverted to an emergency storage basin. This basin has a capacity of approximately 4 million gallons.

Raw wastewater is first subject to screening. Two aquascreens are used with a manually-cleaned bar rack. Cutthroat flumes exist in the channels downstream from the bar screen to regulate water heights to ensure that screen velocities are kept between two and four feet per second. Screenings are compacted and discharged to a dumpster for landfill disposal.

Two aerated grit tanks (e.g., Grit Tank No. 1 and No. 2) are used for removing sand and other heavy, inert particles. Sewage from the service area is discharged to Grit Tank No. 1. Septage waste from tankers is discharged to Grit Tank No. 2 through a small bar rack. Agitation air is supplied by the aeration air blowers in both tanks. Grit is rolled into hoppers for collection by recessed impeller pumps. Grit is then routed through a cyclone separator and classifier for dewatering prior to discharge to a dumpster for landfill disposal.

Storm water runoff from the operation is rerouted to the headworks of the Facility for treatment. Under rare high flow conditions, excessive volumes of storm water may be directed to the storm water outfall to the Mojave River. The proposed Order does not address this potential storm water discharge. The Discharger has obtained coverage under the State's General Permit for Discharges of Storm Water Associated with Industrial Activities (CAS000001).

Primary Clarifiers

Four primary clarifiers reduce the load of suspended solids and biochemical oxygen demand (BOD) to the secondary treatment process by removing gross organic solids. Wastewater flows by gravity from the headworks to the primary clarifiers' influent channel. Two small entrance gates on each clarifier enhance equalization of flow into the clarifier.

Once in the clarifier, solids precipitate out of the wastewater and sink to the bottom of the clarifier tank. These precipitated solids are referred to as sludge. Chain and sprocket sludge collectors move the primary sludge to the influent end of the clarifier tanks. The primary sludge is then removed by progressive cavity sludge pumps and transferred to Digesters No. 1 and No. 2.

The sludge collector removes primary scum from the surface of primary wastewater and sends it to tipping trough collectors. The scum is then routed to a decant tank. Decanted fluid is recycled to the primary clarifiers. The dewatered scum is then hauled to a specially-classified landfill.

Primary effluent leaves the primary clarifiers via V-notch weirs and moves to the secondary treatment process. Fluctuating flows are equalized prior to introduction to the aeration tanks, which are part of the secondary treatment process.

Flow Equalization

Daily flows fluctuate between daytime and evenings. Surges in flows also occur during storm events. The equalization basins are used to eliminate the need to oversize downstream units to handle peak flows. The equalization basins absorb the instantaneous peak flows that are common during the afternoons, evenings, and rainstorms. The basins then release the excess fluids later when flows are lower. This equalization process allows the secondary and tertiary processes to treat nearly constant flows.

There are two, 1.5 million gallon basins at the Facility that provide flow equalization for primary effluent. Each basin is lined, uncovered and equipped with surface aerators. Primary effluent is routed to one of three places:

- The Flow Equalization Basins;
- Aeration Tanks 1-4 (Small); or
- Aeration Tanks 5-8 (Large).

Splitter boxes proportion flow between the large and small aeration tanks through a magnetic flow meter and modulating valve. Flow in excess of present values triggers a diversion gate to open slowly, primary effluent is then directed to the flow equalization basins. Equalized flow is returned to the primary effluent proportioning structures during low flow periods via pumps.

Aeration Basins

Over 90% of the treatment process takes place in the aeration basins. The size and capacity of the aeration system was doubled in 1999 to provide reliable and complete nitrification of the waste stream, year round. Eight (8) aerated basins are used to grow bacteria that in turn digest waste materials and remove contaminants from the wastewater stream (e.g., activated sludge).

The aeration basins form part of the secondary treatment system that greatly reduces the ammonia, total suspended solids (TSS) and BOD levels in the wastewater. Equalized and proportioned primary effluent is introduced to an anoxic zone in the aeration basins. This zone promotes nitrogen removal.

Fine bubble diffusers disperse aeration air to the remainder of the basins. Aeration air is supplied by three centrifugal blowers which are powered by gas-driven engines. A fourth, motor-driven blower is available for emergency standby. The air rate is modulated to maintain a dissolved oxygen level in the tank.

Secondary Clarifiers

Eight (8) secondary clarifiers are used to separate the activated sludge from the water. An aerated mixed liquor channel introduces the aerated biomass to eight (8) secondary clarifiers (five at 55 feet diameter and three at 80 feet diameter). Flow is manually equalized through influent sluice gates. Clarified effluent leaves the units via peripheral V-notched weirs and is routed to the tertiary treatment system via V-notched weirs in the clarifiers.

A sludge collector moves settled materials to a center hopper in the circular tanks. A portion of the sludge is returned to the aeration tanks via the return activated sludge (RAS) pumps. RAS can be introduced to the aeration tanks at multiple locations.

A portion of the settled material (i.e., waste activated sludge or WAS) is removed from the secondary clarifiers via pumps. WAS is routed to the dissolved air flotation thickeners and then to Digester No. 3.

Coagulation/Flocculation

Secondary effluent flows from the secondary clarifiers to the tertiary filtration and disinfection system. Prior to filtration, the secondary effluent is treated with alum or polymer to assist in the coagulation of the remaining solids. The secondary effluent with alum or polymer is then flocculated. The flocculated secondary effluent is then directed to the Traveling Bridge Filters or the Dynasand Filters (e.g., moving bed filters).

Filtration Systems

The two filter systems that exist at VVWRA use essentially the same technology and achieve similar results. At the Traveling Bridge Filter, water enters a tank and flows down through 12 inches of sand and 12 inches of anthracite coal, where tertiary filtration takes place. At the Dynasand Filter, water flows up through finely graded sand, where tertiary filtration takes place. Backwash from both filter systems is pumped to the beginning of the treatment process for full treatment. Effluent from the filters flows to the chlorine contact tanks for disinfection.

Percolation Ponds

Secondary effluent is routed to a collection structure that distributes the secondary effluent to the tertiary treatment system or to a structure that provides for disposal via the percolation ponds. Secondary effluent is typically pumped to the three South Percolation Ponds (Nos. 7-9). (Former Pond No. 9 has been filled and former Pond No. 10 is now Pond No. 9). In addition, the Discharger has constructed four new South Percolation Ponds (Nos. 10-13), which will increase the overall capacity of the Facility. The North Percolation Ponds (Nos. 1-6) receive secondary effluent but are typically limited to operation during the summer months at a capacity of less than 1.2 mgd.

Chlorine Contact Disinfection Tanks

There are three chlorine contact tanks at VVWRA. The disinfected effluent from the chlorine contact tanks is then dechlorinated using sodium bisulfite to remove any residual chlorine. The disinfected and dechlorinated effluent is either recycled for

Facility washdown, on-site and off-site irrigation and landscaping purposes, or is discharged directly to the Mojave River.

Dissolved Air Flotation Thickeners

Two (2) dissolved air flotation (DAF) thickeners are used to thicken primary clarifier and waste activated sludges. The thickened sludge is skimmed off and pumped to the anaerobic digesters for further treatment. The water that is removed from the sludge is then returned back to the beginning of the plant for full treatment.

Biosolids Handling

VVWRA has three (3) anaerobic digesters that are used to reduce the concentration of organic waste in the thickened sludge. After treatment in the digesters, the sludge is dried on solar drying beds and used for offsite agricultural fertilizer. The sludge is also composted offsite.

Recycled Water Use

The existing Order includes requirements for in-plant use of recycled wastewater. For purposes of this Order, "recycled water" as defined in Section 13050 (CWC) and "recycled water" as used in Section 13523 (CWC), are synonymous and refer to treated domestic wastewater that is suitable for reuse.

Use of recycled wastewater is permitted in the existing Order for nonpotable in-plant uses such as landscape irrigation and facility washdown. Recycled water used for landscape irrigation or fire protection must have received the level of treatment required for the final effluent discharge to surface waters as required in the proposed Order (e.g., tertiary-level treatment). Recycled water used for dust control, construction grading, or facility washdown must be at least disinfected secondary-23 recycled wastewater as defined in Section 60301.225, title 22, California Code of Regulations. Recycled water used for in-plant purposes must not be allowed to pond on or be discharged from the Facility.

Order No. R6V-2003-028, adopted on June 11, 2003, also includes recycled wastewater requirements for off-site irrigation uses at the City of Victorville Westwinds Golf Course. The 9-hole, 100-acre golf course is located at the Southern California Logistics Airport (SCLA), which was formerly George Air Force Base. In accordance with Order No. R6V-2003-028¹, tertiary-level treated effluent from VVWRA is reused for irrigation of the landscaping and turf at the golf course. Order R6V-2003-028 specifies acceptable end-uses of recycled water and includes producer effluent specifications. The golf course is located on the bluffs approximately one mile west of the Mojave River. A 3-mile long pipeline delivers tertiary-treated effluent from a recycled water pump station at VVWRA to a 600,000 gallon storage pond at the Westwinds Golf Course. VVWRA can supply a maximum rate of 1.5 mgd of recycled water to the golf course. However, existing seasonal golf course irrigation needs require an annual average of 0.446 mgd of recycled water.

¹ Item 5 of this Order references Order No. 6-99-58 and describes the treatment process.

Expansions and Upgrades

As noted above, the Discharger is upgrading and expanding its capacity to 14.5 mgd (Phase I) and, subsequently, to 18.0 mgd (Phase II) and 22.0 mgd (Phase III).

Order No. 6-99-58 discussed a phased expansion planned between permit issuance on November 17, 1999 and June 30, 2007. On July 26, 2004, VVWRA submitted a *Basis of Design Report: Upgrades to Regional Wastewater Reclamation Facility Project*, which provided the basis of design for an expansion to 14.5 mgd capacity and other plant upgrades. On June 15, 2006, VVWRA submitted a *Basis of Design Report: 18 MGD Expansion Project, Regional Wastewater Facility*. This report provides the basis of design for an expansion to 18 mgd and other plant upgrades.

In addition, the Discharger submitted an *Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant* on March 16, 2007, and a Report of Waste Discharge, dated June 28, 2006, for the first two phases of expansion. The additional flow from the Phase I and Phase II expansions will be discharged after secondary treatment to newly constructed percolation ponds, from where it will percolate into the groundwater. The Discharger also is undertaking additional denitrification, replacing sludge drying beds with belt filter presses, and lining sludge lagoons as additional control measures.

The Discharger also submitted an *Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant: River Discharge* on August 28, 2007 and a revised Report of Waste Discharge, dated August 13, 2007, supporting its planned expansion to a 22.0 mgd discharge. The August 13, 2007, Report of Waste Discharge specifically requested expansion of the effluent discharge to surface water (Discharge Point 001) from 8.3 mgd to 14.0 mgd. This surface water discharge is the discharge regulated in this Order. In the 22 MGD Phase III Expansion Project, the Discharger will add biological nitrogen removal capability and replace tertiary filtration capability using membrane biological reactor technology. Because this technology functions as both secondary clarification and tertiary filtration, the Discharger will convert existing air bays and construct additional tankage for pre and post anoxic reactor tanks. The Discharger also proposes to replace chlorination disinfection and dechlorination technologies with UV filtration. The carbon source for denitrification is from a fermenter unit, which receives sludge from the primary clarifier.

This permit incorporates the changes proposed by VVWRA, thereby allowing the facility to discharge up to 14.0 mgd of tertiary-treated effluent to surface water.

B. Discharge Points and Receiving Waters

The existing Order includes three discharge points: a discharge of effluent to the Mojave River (Discharge Point 001), a discharge of effluent to percolation ponds (Discharge Point 002), and discharge of recycled water (Discharge Point 003). The discharge of recycled water is not actually a single discharge point, but is named as a single discharge point (Discharge Point 003) for simplicity. Names for these discharge

points are not specifically identified in the existing Order. This Order regulates only the following discharge point:

Table 2. Discharge Points and Receiving Waters

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary Treated Effluent (Disinfected)	34 °, 37', 1" N	117 °, 21', 12" W	Mojave River

Discharges from Discharge Point 002 and Discharge Point 003 are regulated under separate orders, as discussed above. The potential discharge of industrial storm water from the Facility is covered by the Statewide General Industrial Permit.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data – Discharge Point 001

For the summary below, monitoring data for the discharge to the Mojave River (Discharge Point 001) were reviewed from Annual Reports between 1999 and 2003; monthly reports between 1999 – 2003 for select pollutants;² monthly reports and quarterly reports³ for 2004; the permit renewal application; and data supplied by the Discharger in electronic form for January 2001 through July 2005. Also, the Water Board conducted site inspections on June 16, 2004, and April 11-12, 2006.

Effluent Limitations and SMR Reporting

Effluent limitations in the existing Order and data reviewed are summarized below:

² The existing Order contains average weekly effluent limitations for BOD and TSS. Weekly data for BOD and TSS were reviewed based on electronic data submitted by the Discharger for January 2001 through July 2005.

³ Monthly reports for February and July, 2004; Quarterly reports for 2nd and 3rd Quarter 2004.

Table 3. Selected Historic Effluent Limitations and Monitoring Data—Discharge Point 001

Parameter	Units	Effluent Limitations			Monitoring Data	
		Average Monthly	Average Weekly	Maximum Daily	Highest Reported Average Monthly Discharge	Highest Reported Daily Discharge
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10 (30-day mean)	15	30	5.1 (10.8 Highest Average Weekly discharge)	13
	lbs/day	692 (30-day mean)	1,038	2,077	484	785
Total Suspended Solids (TSS)	mg/L	10 (30-day mean)	15	30	3.4 (9.1 Highest Average Weekly discharge)	22.5
	lbs/day	692 (30-day mean)	1,038	2,077	345	1,277
Methylene Blue Active Substances (MBAS)	mg/L	1.0 (30-day mean)	—	2.0	0.35	0.55
	lbs/day	69 (30-day mean)	—	138	14	32
Total Dissolved Solids dried at 180°C (TDS)	mg/L	460 (12-month mean)	—	580	456	510
	lbs/day	31,842 (12-month mean)	—	40,149	27,392	28,603

"—" = no effluent limitation

Other effluent limitations established for the discharge to the Mojave River in Order No. 6-99-58 were as follows:

- Flow to the Mojave River shall not exceed an annual average of 8.3 mgd.
- Maximum instantaneous flow rate to the treatment facilities shall not exceed 14.0 mgd.
- Dissolved oxygen in the effluent shall not be less than 1.0 mg/L.
- The 30-day average percent removal for BOD and TSS shall be at least 85%.
- All wastewater discharged to the Mojave River shall have a pH of not less than 6.5 pH units nor more than 8.5 pH units nor cause changes of normal ambient levels exceeding 0.5 pH units.
- Effluent shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 mL and the number of coliform organisms does not exceed 23 per 100 mL (i.e., maximum) in more than one sample within any 30-day period. The median value shall be determined from the bacteriological results of the last 7-days for which analyses have been completed.
- Effluent shall be a filtered wastewater that does not exceed an 30-day running average turbidity of 2 turbidity units (NTU) and does not exceed 5 NTU more than 5 percent of the time during any 24-hour period.

- Effluent shall contain a maximum one-hour average total chlorine residual concentration of 0.019 mg/L and a four-day average total chlorine residual concentration of no more than 0.011 mg/L. The maximum daily discharge of chlorine shall be 1.3 lbs/day based on the maximum instantaneous flow of 14.0 mgd following flow equalization.

Summary of Permit Renewal Application Data

Effluent data also were provided with permit renewal application for discharges from the treatment plant to the Mojave River and included the following for conventional and non-conventional pollutants:

Table 4. Application Data for Conventional and Non-Conventional Pollutants – Discharge Point 001

Parameter	Units	Maximum Daily Value	Average Daily Value
Conventionals and Non-Conventionals			
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	13.00	3.40
Total Coliform	#/100mL ¹	300	2.0
Oil and Grease	mg/L	12.80	3.50
pH (min)	s.u.	6.0	—
pH (max)	s.u.	7.55	—
Total Suspended Solids (TSS)	mg/L	22.5	2.8
Ammonia Nitrogen, Total (as N)	mg/L	7.80	1.80
Chlorine, Total Residual	mg/L	0.011	0.004
Dissolved Oxygen	mg/L	9.11	6.77
Flow Rate	mgd	9.80	6.53
Nitrite Plus Nitrate (as N)	mg/L	Not Reported	Not Reported
Phosphorus, Total (as P)	mg/L	Not Reported	Not Reported
Temperature (°C) (Winter)	°C	27.60	21.60
Temperature (°C) (Summer)	°C	28.60	25.50
Total Dissolved Solids (TDS)	mg/L	498.00	350.00
Total Kjeldahl Nitrogen (as N)	mg/L	4.20	1.80
Whole Effluent Toxicity Testing			
Acute Toxicity	% Survival in 100% effluent	70-100	—
Chronic Toxicity ² : <i>Pimephales promelas</i>		No significant difference	—
Chronic Toxicity ² : <i>Ceriodaphnia dubia</i>		No significant difference	—

"—" = no reported values

¹ Erroneously reported in Application Form 2A as fecal coliform.

² Chronic WET testing was conducted on the effluent and a control sample using *Pimephales promelas* (larvae survival and teratogenicity) and *Ceriodaphnia dubia* (survival and reproduction). The Discharger reported no significant difference between the control sample and a sample of 100% effluent in annual tests between 2000 and 2004.

The permit renewal application also included the results of priority pollutant sampling for effluent discharged to the Mojave River. Data for priority pollutants in the receiving water were not provided with the permit renewal application, but were provided with separate sampling conducted to implement the California Toxics Rule (CTR), as discussed below. Receiving water toxicity testing results were included with the permit renewal application.

From December 2001 through May 2002 the Discharger collected two samples per month of the effluent discharged to the Mojave River for a total of 12 samples and analyzed them for the 126 "Priority Pollutants." Samples were also collected from the upgradient and down gradient receiving water stations in the Mojave River. The following table presents data for priority pollutants detected. All other priority pollutants were reported as below method detection limits and, therefore, data were not included in this table.

Table 5. Application Data for Priority Pollutants -- Discharge Point 001

Parameter	Units	Maximum Daily Value	Average Daily Value
Priority Pollutants			
Antimony, Total Recoverable	µg/L	0.32	0.28
Antimony, Total Recoverable	lbs/day	0.022	0.016
Arsenic, Total Recoverable	µg/L	5	3.81
Arsenic, Total Recoverable	lbs/day	0.34	0.22
Cadmium, Total Recoverable	µg/L	0.1	0.064
Cadmium, Total Recoverable	lbs/day	0.0067	0.0037
Chromium III	µg/L	3	2.25
Chromium III	lbs/day	0.20	0.13
Copper, Total Recoverable	µg/L	4	2.88
Copper, Total Recoverable	lbs/day	0.27	0.17
Lead, Total Recoverable	µg/L	0.5	0.34
Lead, Total Recoverable	lbs/day	0.034	0.019
Mercury, Total Recoverable	µg/L	0.026	0.023
Mercury, Total Recoverable	lbs/day	0.0018	0.0013
Nickel, Total Recoverable	µg/L	2	1.57
Nickel, Total Recoverable	lbs/day	0.13	0.090
Selenium, Total Recoverable	µg/L	1.4	0.98
Selenium, Total Recoverable	lbs/day	0.094	0.057
Silver, Total Recoverable	µg/L	0.7	0.32
Silver, Total Recoverable	lbs/day	0.047	0.018
Thallium, Total Recoverable	µg/L	0.01	0.0054
Thallium, Total Recoverable	lbs/day	0.00067	0.00031
Zinc, Total Recoverable	µg/L	51	38.3
Zinc, Total Recoverable	lbs/day	3.44	2.21
Cyanide	µg/L	7	2.68
Cyanide	lbs/day	0.47	0.15
Chlorodibromomethane	µg/L	1.6	0.42
Chlorodibromomethane	lbs/day	0.11	0.024
Chloroethane	µg/L	0.39	0.13

Parameter	Units	Maximum Daily Value	Average Daily Value
Chloroethane	lbs/day	0.026	0.0074
Chloroform	µg/L	16	8.50
Chloroform	lbs/day	1.08	0.49
Dichlorobromomethane	µg/L	6.7	0.11
Dichlorobromomethane	lbs/day	0.45	0.11
Methyl Chloride	µg/L	0.33	0.17
Methyl Chloride	lbs/day	0.02	0.0095
Methylene Chloride	µg/L	2.9	0.40
Methylene Chloride	lbs/day	0.20	0.023
Bis(2-Ethylhexyl)Phthalate	µg/L	15	2.52
Bis(2-Ethylhexyl)Phthalate	lbs/day	1.01	0.15
Dibenzo(a,h)Anthracene	µg/L	0.06	0.032
Dibenzo(a,h)Anthracene	lbs/day	0.0040	0.0019
1,4-Dichlorobenzene	µg/L	0.9	0.67
1,4-Dichlorobenzene	lbs/day	0.061	0.039
Dimethyl Phthalate	µg/L	1.1	0.63
Dimethyl Phthalate	lbs/day	0.074	0.037

The following acute and chronic toxicity results were reported for the Mojave River downstream of Discharge Point 001:

Table 6. Application Data for Aquatic Toxicity Mojave River (Receiving Water)

Parameter	Units	Reported Values
Acute Toxicity	% Survival in 100% effluent	75 – 100
Chronic Toxicity ¹ : <i>Pimephales promelas</i>		Significant difference downstream (1/23/01) Significant difference upstream (1/21/04)
Chronic Toxicity ¹ : <i>Ceriodaphnia dubia</i>		No significant difference

¹ Chronic WET testing was conducted on the receiving water (upstream and downstream) and a control sample using *Pimephales promelas* (larvae survival and teratogenicity) and *Ceriodaphnia dubia* (survival and reproduction). The Discharger reported no significant difference between the control sample and a sample of 100% receiving water in all but two annual tests (as noted in the table above) between 2000 and 2004

D. Compliance Summary – Discharge Point 001

The summary of violations and non-compliance during the permit term has been assembled from discharger self monitoring reports, discharger letters, and other available information. The violations are assembled in chronological order.

1999

Turbidity: The effluent turbidity to the Mojave River was measured with a 30-day average of 2.35 NTUs which exceeded the 30-day average limit for turbidity of 2 NTUs (June 1999).

2000

Nitrate: Influent sampling for nitrate was not conducted (September 2000).

2001

Total Coliform: The final effluent to the Mojave River was measured with a coliform count of 300 colonies per 100 ml (April 3, 2001) and 30 colonies per 100 ml (July 28, 2001) causing an exceedance of the limitation that the number of coliform organisms not exceed 23 per 100 mL (i.e., maximum) in more than one sample within any 30-day period.

2002

Total Coliform: The final effluent to the Mojave River was measured with a coliform count of 33 colonies per 100 ml (February 19, 2002) and 72 colonies per 100 ml (March 4, 2002) causing an exceedance of the limitation that the number of coliform organisms not exceed 23 per 100 mL (i.e., maximum) in more than one sample within any 30-day period.

2003

No significant events of exceeding effluent limitations occurred during 2003.

2004

Total coliform: The final effluent to the Mojave River was measured with a coliform count of 80 colonies per 100 ml (March 17, 2004) and 110 colonies per 100 ml (4/15/04), causing an exceedance of the limitation that the number of coliform organisms not exceed 23 per 100 mL (i.e., maximum) in more than one sample within any 30-day period. The probable cause of this event was an excessive buildup of algae on the secondary clarifier weirs.

2005

Unpermitted discharge: On April 12, 2005, a rapid erosion of a south percolation pond levee caused an unauthorized discharge of 8.72 million gallons of non-disinfected secondary treated wastewater to the Mojave River. The investigation of the incident revealed that the overflow occurred because level sensors on the south percolation ponds did not provide sufficient information to operations staff that would have prevented the incident.

2006

Turbidity: On April 11, 2007, the effluent turbidity to the Mojave River was above 5 NTUs for a period of 7½ hrs, exceeding the time limit of 72 minutes. The event occurred from 12:08 am to 7:45 am. The cause of the event was failure of the plant's

two backup generators to supply power during an power interruption that occurred on April 10, 2007 at 7:00 pm. The backup generators started but an incorrect setting tripped the generators and thereby prevented the generators to supply power to the plant. The operators made adjustments to the settings and restored power to the facility from one of the backup generator at about 10:20 am. The electric utility restored power to the facility at 11:30 am. During the outage, wastewater flowed through the plant, but the wastewater flow did not receive aeration, thereby effectively bypassing the secondary treatment facilities. Sludge overflowed the weirs of the secondary clarifiers, causing an overload of solids in the tertiary filters. The overloaded filters caused a discharge of excessive solids to the Mojave River.

Turbidity and monthly total suspended solids events: During the April 11-12, 2006, compliance evaluation inspection, the Water Board noted extended periods of time between January and April 2006 where the 30-day running average turbidity limitation and the average monthly TSS limitation were exceeded.

2006 to 2007

TDS: From July 2006 to August 2007, for a period of 14 consecutive separate months, the discharger exceeded either the daily maximum rate of 40,149 lbs/day or the 12-month mean rate of 31,842 lbs/day. During this period, the discharger met their concentration limits for TDS. The event occurred because the discharger increased flow to the Mojave River, which reached a mean monthly flow of 11.92 MGD in October 2006. In September 2007, the discharger was back in compliance with the rate limits for TDS.

E. Planned Changes

The allowable discharge to the Mojave River (Discharge Point 001) will expand to 14.0 mgd (as specified in the August 28, 2007, Anti-degradation Analysis and August 13, 2007, Report of Waste Discharge and February 7, 2008 Anti-Degradation Analysis Addendum and NPDES permit application submitted by the Discharger) from the previous discharge of 8.3 mgd (as specified in Order No. 6-99-58).

The Discharger has planned upgrades and expansions (as discussed above) that would include an additional discharge to the percolation ponds via Discharge Point 002 and an increase in design flow for the discharge to the Mojave River via Discharge Point 001 14.0 mgd. This Order is affected by the increased discharge to the Mojave River.

Mass based effluent limitations were included in the Order No. 6-99-58 for discharges to the Mojave River for BOD, TSS, MBAS and TDS; therefore mass-based effluent limitations are established in this Order for these pollutants (as well as other pollutants) at Discharge Point 001.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

- 1. Water Quality Control Plans.** The Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) which became effective on March 31, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Mojave River and the upper Mojave River Valley Ground Waters are as follows:

Table 7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Mojave River; Surface Water (Dept. of Water Resources No. 628.2 – Upper Mojave Hydrologic Area of the Mojave Hydrologic Unit)	Existing: Municipal and domestic water supply (MUN), Agricultural Supply (AGR), Groundwater Recharge (GWR), Contact (REC-1) and Non-Contact (REC-2) water recreation, Commercial and Sport fishing (COMM), Cold Freshwater Habitat (COLD), Warm freshwater habitat (WARM), wildlife habitat (WILD).

Requirements of this Order implement the Basin Plan.

VWVRA is currently collecting data to characterize the water quality, biological resources, and beneficial uses of the Mojave River upstream and downstream of the VWVRA discharge and will provide this information to assist in updating the Basin

Plan water quality standards. Upon completion of the study (June 30, 2010), the Water Board may use this information, or other additional data, to amend the Basin Plan accordingly.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.
3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 C.F.R. § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
5. **Stringency of Requirements for Individual Pollutants.** Individual pollutant restrictions in this Order consist of technology-based and water quality-based effluent limitations. This Order contains some restrictions on individual pollutants that are more stringent than the minimum technology-based limitations required by the federal CWA. Specifically, technology-based effluent limitations for two constituents, 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS), are more stringent than required by the secondary treatment standards under the CWA. As explained in Section IV.B.2 below, these effluent limitations are based on the performance of the Discharger's tertiary treatment system. This tertiary treatment system is necessary to protect the beneficial uses of the receiving water and meet requirements for recycled water, consistent with Water Code section 13241 (specifically (a) and (f)). In addition, these limitations were included in and carried over from Order No. 6-99-58. Water quality-based effluent limitations in this Order have been scientifically derived to implement water quality objectives that

protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses in the Basin Plan were approved by USEPA in 2004 and are applicable water quality standards pursuant to section 131.21(c)(2). This Order's restrictions on individual pollutants are no more stringent than required to implement the applicable water quality standards for purposes of the CWA.

6. Antidegradation Policy. Section 131.12 of 40 CFR requires that the State water quality standards include an antidegradation policy consistent with the federal policy.

The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The Water Board has determined that the Discharger's proposal for Membrane Biological Reactor treatment for filtration and nitrification-denitrification and ultraviolet (UV) disinfection will meet the requirement for best practicable treatment and control and is consistent with federal and State antidegradation policies. The discharger's plans to construct new facilities will result in a higher effluent quality discharged to the Mojave River. This change in water quality is consistent with maximum benefit to people of the State because water quality is improved. The resultant effluent quality will not unreasonably affect present and anticipated beneficial uses and not result in a water quality less than prescribed in the Basin Plan. The treatment plant upgrades result in the best practicable treatment or control of the discharge to prevent pollution or nuisance. After considering the incremental cost increases to the VVWRA user fees, added demand upon the state's energy grid, and associated waste disposal costs with reverse osmosis brine, the Water Board concludes that the proposed project results in the highest water quality consistent with maximum benefit to the people of the state.

7. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All

effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

- 8. Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (hereinafter MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

D. Impaired Water Bodies on CWA 303(d) List

The Mojave River is not listed as an impaired water body on the CWA 303(d) List.

E. Other Plans, Policies and Regulations – Not Applicable

PROPOSED

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs may be established: (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

A. Discharge Prohibitions

The discharge prohibitions established in this Order are from waste discharge prohibitions in the Basin Plan that apply to the entire Lahontan Region (Section 4.1) or based on discharge prohibitions specified in the California Water Code.

B. Technology-Based Effluent Limitations

1. Scope and Authority

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in § 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator. Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary-level treatment in terms of biochemical oxygen demand (5-day at 20°C) or BOD₅, total suspended solids (TSS), and pH. These regulations at 40 CFR §133.102 prohibit BOD₅ and TSS concentrations from exceeding a 30-day average of 30 mg/l (expressed as average monthly effluent limitations) and a 7-day average of 45 mg/l (expressed as average weekly effluent limitations) and that the average percent removal of BOD₅ and TSS be no less than 85%. These regulations also require that pH be maintained between 6.0 and 9.0 standard units.

In addition, regulations promulgated in 40 CFR §125.3(a)(1) require technology-based effluent limitations for municipal discharges in NPDES permits for POTWs based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

2. Applicable Technology-Based Effluent Limitations

Although the Discharger is subject to technology-based effluent limitations based on the secondary treatment standards at 40 CFR Part 133, the Discharger provides tertiary treatment, including inline coagulation/flocculation, filtration, chlorination, and dechlorination, in order to protect the beneficial uses of the Mojave River downstream of the discharge (see Section IV.C. below). The tertiary treatment required to maintain these beneficial uses of the Mojave River results in better performance and warrant more stringent effluent limitations for BOD₅ and TSS than what is required by secondary treatment standards. The previous Order (No. 6-99-58) included technology-based effluent limitations for BOD₅ and TSS effluent concentrations based on the performance capability of the tertiary treatment system. These effluent limitations are carried over from Order No. 6-99-58 and are summarized in Table 8 below. The technology-based limitations for pH and the requirement for 85 percent removal of BOD₅ and TSS for Discharge Point 001 are based on the secondary treatment standards at 40 CFR Part 133. However, as discussed in Section IV.C below, the Basin Plan water quality objectives for pH require water quality-based effluent limitations more stringent than the limitations based on secondary treatment standards.

Discharge flow to the Mojave River (Discharge Point 001) is limited to the rated design capacity of 14.0 mgd as an average annual flow. This limitation is modified from the previous Order (No. 6-99-58).

Mass-based effluent limitations for Discharge Point 001 are calculated from concentration-based limitations using the following equation and are based on a permitted flow for the discharge to the Mojave River of 14.0 mgd.

Mass-based effluent limitations are established using the following formula:

$$\text{Mass (lbs/day)} = \text{flow rate (MGD)} \times 8.34 \times \text{effluent limitation (mg/L)}$$

Where:

Mass = mass limitation for a pollutant (lbs/day)

Effluent limitation = concentration limitation for a pollutant (mg/L)

Flow rate = discharge flow rate (MGD)

8.34 is a conversion factor

Summary of Technology-based Effluent Limitations Discharge Point 001

Table 8. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations					Six-Month Median
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10	15	30	--	--	--
	lbs/day	1,170	1,750	3,500	--	--	--
pH	standard units	--	--	--	6.0	9.0	--
Total Suspended Solids	mg/L	10	15	30	--	--	--
	lbs/day	1,170	1,750	3,500	--	--	--

"--" = not applicable

The average annual flow of effluent discharged to the Mojave River shall not exceed 14.0 million gallons per day (mgd).

The average monthly percent removal for Biochemical Oxygen Demand (BOD), 5-day @ 20°C and Total Suspended Solids (TSS) shall be at least 85 percent.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard. The process for determining reasonable potential and calculating WQBELs, when necessary, is intended to protect the beneficial uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

As noted in Section III, the beneficial uses of the Mojave River downstream of Discharge Point 001 include municipal and domestic water supply (MUN), Agricultural Supply (AGR), Groundwater Recharge (GWR), Contact (REC-1) and Non-Contact (REC- 2) Water Recreation, Commercial and Sport Fishing (COMM), Cold Freshwater Habitat (COLD), Warm Freshwater Habitat (WARM) and Wildlife Habitat (WILD).

The Basin Plan includes both narrative and numeric water quality objectives applicable to the Mojave River. In addition, priority pollutant criteria in the CTR apply to the Mojave River.

3. Determining the Need for WQBELs

California Toxics Rule (CTR) Parameters (Priority Pollutants)

In accordance with Section 1.3 of the SIP, the Water Board conducted a reasonable potential analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the proposed Order. The Water Board analyzed effluent and receiving water data to determine if a pollutant in a discharge has the reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have the reasonable potential to cause or contribute to an excursion above a water quality standard, numeric WQBELs are required. The RPA considers water quality criteria and objectives outlined in the CTR, NTR, and Basin Plan for protection of freshwater aquatic life and for human health for consumption of water and organisms.

Some CTR criteria are hardness or pH-dependent. The Discharger provided receiving water hardness data as part of their required monitoring for priority pollutants with criteria in the CTR. The Discharger also provided pH data as part of routine receiving water monitoring during the term of the existing Order. The hardness value of 170 mg/L as CaCO₃ and a pH of 7.2 standard units, the lowest measured hardness and pH, representing the most conservative approach, were used in the RPA to calculate certain freshwater criteria.

The Discharger is required to analyze effluent samples for CTR priority pollutants annually for the life of the permit to determine the presence of these pollutants in the discharge and provide data for future reasonable potential assessments. Some priority pollutants (e.g., copper, cyanide) must be monitored more frequently to demonstrate compliance with effluent limitations established in this Order.

To conduct the RPA, the Water Board identified the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete the RPA:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criterion or applicable objective (C), a limit is needed.
- 2) Trigger 2 - If background water quality (B) > C and the pollutant is detected in the effluent, a limit is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger is required to gather the appropriate data for the Water Board to conduct the RPA. Upon review of the data, and if the Water Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

Board staff requested in a June 27, 2001 letter that the Discharger provide analytical information regarding priority pollutants in the effluent and receiving water. The Discharger submitted effluent and receiving water data for priority pollutants to the Water Board that were collected between December 2001 and May 2002. In addition, the Discharger submitted some priority pollutant data in Annual Reports from 1999 to 2005 and as part of its application for permit renewal. These data were sufficient to perform the RPA for the discharge to the Mojave River. The State Implementation Policy specifies no minimum number of samples to complete a Reasonable Potential Analysis. The June 27, 2001 letter indicated Water Board staff's conclusion that a data set consisting of 12 samples collected once every two weeks over a six-month period was statistically significant.

Data for pollutants determined to have reasonable potential are summarized in Table 9 for Discharge Point 001. Based on this information, the discharge from VVWRA has the reasonable potential to cause or contribute to an excursion of applicable water quality criteria from the CTR for the following constituents: copper, zinc, cyanide, chlorodibromomethane (dibromochloromethane),

dichlorobromomethane (bromodichloromethane), bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene.

Other pollutants also present in the effluent, but not triggering reasonable potential, include the following CTR pollutants: antimony, arsenic, cadmium, chromium III, lead, mercury, nickel, selenium, silver, thallium, chloroethane, chloroform, methyl chloride, methylene chloride, 1,4-dichlorobenzene, and dimethyl phthalate.

Table 9. Summary of Reasonable Potential Analysis for CTR Pollutants Observed – Discharge Point 001

Parameter	Maximum Observed Effluent Concentration (µg/L)	Maximum Background Concentration (µg/L)	Most Stringent Applicable CTR Criterion (µg/L)	Reasonable Potential?	Basis for Reasonable Potential Determination
Antimony	0.3	0.07	14 ²	No	—
Arsenic	5	3	150	No	—
Cadmium	0.1	ND	3.73	No	—
Chromium III	3	2	320	No	—
Copper	4	20	14.7 ¹	Yes	Trigger 2
Lead	0.5	0.21	6.25	No	—
Mercury	0.026	0.02	0.050 ²	No	—
Nickel	2	2	8.17	No	—
Selenium	1.4	1.2	5	No	—
Silver	0.7	0.03	10.1	No	—
Thallium	0.01	0.01	1.7 ²	No	—
Zinc	240	60	188 ¹	Yes	Trigger 1
Cyanide	7	6	5.2	Yes	Triggers 1 and 2
Chloroethane	0.39	0.4	—	No	—
Chlorodibromomethane (Dibromochloromethane)	30	0.75	0.41 ²	Yes	Triggers 1 and 2
Chloroform	51	33	—	No	—
Dichlorobromomethane (Bromodichloromethane)	17	4.8	0.56 ²	Yes	Triggers 1 and 2
Methyl Chloride	0.33	0.33	—	No	—
Methylene Chloride	2.9	2.9	4.7 ²	No	—
Bis(2-ethylhexyl) phthalate	15	10	1.8 ²	Yes	Triggers 1 and 2
Dibenzo(a,h)anthracene	0.06	None	0.0044 ²	Yes	Trigger 1
1,4 Dichlorobenzene	0.9	1	400 ²	No	—
Dimethyl Phthalate	1.1	ND	313,000 ²	No	—

"—" = not applicable

¹ Freshwater aquatic life criteria for metals are expressed as a function of total hardness in the water body. (See page 31717 of Federal Register Notice Vol. 65, No. 97, May 18, 2000, for calculations). The copper and zinc criteria were based on a hardness value of 170 mg/L (as CaCO₃) (the minimum value) from upstream data from 12/10/01, 12/18/01, 1/16/02, 2/5/02, 2/26/02 and 4/18/02.

² Human health criteria for consumption of water and organisms were based on the receiving water beneficial use of MUN.

Non-CTR Pollutants

The procedures in the SIP for determining reasonable potential and calculating WQBELs specifically apply only to priority pollutant criteria promulgated through the NTR and CTR and to priority pollutant objectives established by Water Boards in their Basin Plans. For other constituents, the Water Board must determine what procedures it will use to evaluate reasonable potential and calculate effluent limitations. In order to maintain consistency in methodology for permitting discharges of various constituents, the Water Board proposes to use the same procedures required by the SIP for CTR constituents to evaluate reasonable potential and, where necessary, develop WQBELs for non-CTR constituents.

For constituents with no promulgated numeric water quality criteria or objectives, the Water Board also must interpret narrative objectives from the Basin Plan to establish the basis for reasonable potential and effluent limitation calculations. In addition to USEPA National Recommended Water Quality Criteria, the Central Valley Water Board has developed *A Compilation of Water Quality Goals* that it uses to help select the appropriate basis for interpreting narrative criteria in NPDES calculations. These goals include USEPA-recommended criteria for protection of aquatic life, drinking water MCLs, agricultural water quality limits, and other water quality goals designed to protect various beneficial uses. Appropriate selection of criteria or goals to interpret narrative criteria depends on the specific beneficial uses of the receiving water. For example, drinking water MCLs and SMCLs are used to interpret narrative criteria if the receiving water is a source of municipal drinking water (MUN). Board staff proposes to use *A Compilation of Water Quality Goals*, where appropriate, to help select numerical water quality goals to interpret narrative water quality objectives from the Basin Plan.

Table 10 summarizes the reasonable potential analysis for non-CTR parameters at Discharge Point 001. The table includes data on non-CTR constituents detected and quantified in the Discharger's effluent based on monitoring data from 1999 through 2006. The table includes the maximum concentration of each parameter present in the Discharger's effluent at quantifiable levels, the background concentrations (concentrations in receiving water upstream of the discharge), and the most stringent applicable recommended water quality criterion, objective, or goal along with the basis of that criterion, objective, or goal.

The Basin Plan includes a narrative criterion for Chemical Constituents (pages 3-4 and 3-5) which, in part, says, "Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect water for beneficial uses (i.e., agricultural purposes)." In addition, page 3-15 of the Basin Plan states, "In determining compliance with objectives including references to the AGR designated use, the Water Board will refer to water quality goals and recommendations from sources such as the Food and Agriculture Organization of the United Nations, University of California Cooperative Extension, Committee of Experts, and McKee and Wolf's 'Water Quality Criteria' (1963)."

The United Nation's Agricultural Water Quality Limit for sodium is 69 mg/L (as noted in *A Compilation of Water Quality Goals*). This value is the lowest available numerical value available for interpreting the chemical constituents objective for sodium (see Table 10 below); however, this water quality goal cannot be used as an absolute value for interpreting the narrative Water Quality Objective for Chemical Constituents from the Basin Plan (see State Water Board WQO 2004-0010). Therefore, the Water Board has not determined that the discharge of sodium from the facility will not cause, have the reasonable potential to cause, or contribute to an excursion of the narrative Basin Plan Water Quality Objective for Chemical Constituents. Should additional monitoring or other information indicate that the AGR use is potentially impacted by the discharge, the Water Board will consider the need for an effluent limitation for sodium.

PROPOSED

Table 10. Summary of Reasonable Potential Analysis for Non-CTR Pollutants – Discharge Point 001

Parameter	Maximum Observed Effluent Concentration (in µg/L unless otherwise noted)	Maximum Background Concentration (B) (in µg/L unless otherwise noted)	Most Stringent Applicable Recommended Water Quality Criterion or Goal (in µg/L unless otherwise noted)	Basis for Minimum Applicable Water Quality Criterion or Goal	Reasonable Potential?	Basis for Reasonable Potential Determination
CONVENTIONAL POLLUTANTS						
Fecal Coliform	No Data	No Data	Log Mean of 20/100 mL (30-day period) and no more than 10 percent of samples may exceed 40/100 mL (30-day period)	Basin Plan Objective	Yes	Basin Plan Objective for fecal coliform; constituent generally present in POTW effluent; subset of total coliform; total coliform data show exceedances of total coliform criteria
pH	6.0 – 7.75 (standard units)	7.2 – 8.3 (standard units)	6.5-8.5 (standard units)	Basin Plan Objective	Yes	MEC > WQO
NON-CONVENTIONAL POLLUTANTS						
Ammonia Nitrogen, Total (as N)	15,900	100	5,900 (1-hour average) ² 960 (4-day average)	Basin Plan – Based on 1986 EPA Criteria	Yes	MEC > WQO
Chlorine, Total Residual	5-7 (Range of Daily Averages)	No Data	3 (maximum) 2 (six-month median)	Basin Plan Objectives (EPA Aquatic Life Criteria are 19 [1-hour average] and 11 [4-day average])	Yes	MEC > WQO
Chloroform ¹	51	No Data	100	Basin Plan Objective for Chemical Constituents – California Primary MCL	No	--
Coliform, Total	300/100 mL (April 3-2001 and 33/100 mL and 74/100 mL within 30 days (February 19 – March 4, 2002))	No Data	MPN of 2.2 per 100 mL (median of last 7 days analyses); MPN of 23 per 100/mL (no more than one sample in any 30 days); MPN of 240 per 100 mL (instantaneous maximum)	CCR, Title 22 requirements for disinfected tertiary recycled water – required for application in landscaping and on unrestricted access golf courses and to protect beneficial uses of Mojave River (AGR and REC-1)	Yes	MEC > WQO

Parameter	Maximum Observed Effluent Concentration (in µg/L unless otherwise noted)	Maximum Background Concentration (B) (in µg/L unless otherwise noted)	Most Stringent Applicable Recommended Water Quality Criterion or Goal (in µg/L unless otherwise noted)	Basis for Minimum Applicable Water Quality Criterion or Goal	Reasonable Potential?	Basis for Reasonable Potential Determination
Methylene Blue Active Substances (MBAS)	550	<20	500	Basin Plan Objective for Chemical Constituents – Secondary MCL for foaming agents	Yes	MEC > WQO (based on SMCL)
Molybdenum	<10	<2.0	No numeric objective or criterion	USEPA IRIS value is 35 µg/L	No	--
Nitrate Nitrogen ³ , Total (as N)	50,000 (as N)	1,800 (as N)	10,000 (as N)	Basin Plan Objective for Chemical Constituents – MCL	Yes	MEC > WQO (based on MCL)
Sodium	110,000	No Data	No numeric Water Quality Objective or numeric interpretation of narrative Water Quality Objective for this site – United Nations Agricultural Water Quality Limit is 69,000 (69 mg/L)	Basin Plan Narrative Objective for Chemical Constituents	No – Agricultural Goal alone insufficient for reasonable potential determination	--
Total Dissolved Solids	510,000	430,000	No numeric objective or criterion	--	No reasonable potential based on data alone, but limits required based on existing limits in permit	Existing Effluent Limitations
Turbidity	4.60	7.6 (upstream); 7.8 (downstream)	2 NTU (average within a 24-hour period); 5 NTU (cannot be exceeded more than 5 percent of the time in a 24-hour period); 10 NTU (instantaneous maximum)	CCR, Title 22 requirements for filtered wastewater – required for application for landscaping and unrestricted access golf courses and to protect beneficial uses of Mojave River (AGR and REC-1)	Yes	MEC > WQO B > WQO

Parameter	Maximum Observed Effluent Concentration (in µg/L unless otherwise noted)	Maximum Background Concentration (B) (in µg/L unless otherwise noted)	Most Stringent Applicable Recommended Water Quality Criterion or Goal (in µg/L unless otherwise noted)	Basis for Minimum Applicable Water Quality Criterion or Goal	Reasonable Potential?	Basis for Reasonable Potential Determination
Vanadium	30	10	50	Basin Plan Objective for Chemical Constituents – California State Action Level for Drinking Water (Agr. Water Quality Limit is 100 µg/L)	No	–

¹ Chloroform is a CTR pollutant; however, no criteria for chloroform were promulgated in the CTR. Therefore, for purposes of a reasonable potential analysis, chloroform is treated as a non-CTR pollutant. EPA has proposed recommended criteria for protection of human health to replace its current recommended criteria. In light of the uncertainty regarding EPA's criteria recommendations, the Water Board is using the California MCL for chloroform as the basis for the reasonable potential analysis for this constituent.

² The Water Board used data provided by the Discharger for the Mojave River downstream of Discharge Point 001 to calculate applicable ammonia objectives. The Discharger provided quarterly pH and temperature data for 1999-2003. The Water Board selected data for the most critical month (August) from the quarterly data and used the median pH (7.6 standard units) and the average temperature (23.2 °C) from the August data to determine ammonia objectives using Tables 3-1 and 3-3 (waters designated COLD) from the Basin Plan.

³ The wastewater undergoes aerobic secondary treatment prior to being directed to Outfall 001 and 002. Under these circumstances, organic nitrogen is converted to ammonia, which is converted to nitrate.

09-0116

4. WQBEL Calculations

As specified in 40 CFR section 122.44(d)(1)(i), permits are required to include WQBELs for pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan and achieve applicable water quality objectives and criteria (that are contained in the Basin Plan and other State plans and policies) or USEPA water quality criteria contained in the CTR and NTR.

WQBEL Calculations for CTR Parameters (Priority Pollutants)

The specific procedures for calculating WQBELs for CTR parameters are contained in Section 1.4 of the SIP. These procedures include:

- 1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).
- 2) Use of a steady-state model to derive an effluent concentration allowance (ECA) and use of statistical procedures based on a lognormal distribution of effluent pollutant concentrations to develop maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).
- 3) Where sufficient effluent and receiving water data exist, use of a dynamic model that has been approved by the Water Board.
- 4) Establishing effluent limitations that consider intake pollutants using procedures in the SIP.

Because there are no TMDLs for the Mojave River and there is no dynamic model approved by the Water Board for modeling the effects of this discharge, and consideration of intake pollutants is not appropriate for this discharge, the Water Board has used the second procedure to develop effluent limitations. Using a simple mass-balance equation, the Water Board has calculated ECAs as follows:

$$ECA = C + D(C - B) \text{ when } C > B, \text{ and} \\ ECA = C \text{ when } C \leq B$$

Where:

C = the priority pollutant criterion/objective, adjusted for hardness, pH, and translators

D = the dilution credit; and

B = the ambient background concentration.

The ambient background concentration is the observed maximum concentration with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects is the ambient background concentration as an arithmetic mean.

Downstream of the discharge, the Mojave River is, at times, composed entirely of effluent. Therefore, no dilution credit is applied in calculations of WQBELs for the discharge to the Mojave River. Thus:

$$\begin{aligned} ECA &= C + D (C - B) \\ &= C + 0 (C - B) \\ &= C \end{aligned}$$

As noted above, some CTR criteria are hardness- or pH-dependent. The Discharger provided receiving water hardness data as part of its required monitoring for priority pollutants with criteria in the CTR. The Discharger also provided pH data as part of routine effluent monitoring during the term of the previous Order. The hardness value of 170 mg/L as CaCO₃ and a pH of 7.2 standard units, the lowest measured receiving water hardness and pH, were used in all calculations. Since a site specific translator has not been developed for any CTR constituent, as described in the SIP Section 1.4.1, the USEPA conversion factors for copper and zinc were used for translating the dissolved copper and zinc criteria into total recoverable effluent concentration allowances (ECA) with no dilution.

Aquatic Life Criterion or Objective

For each ECA based on an aquatic life criterion or objective (i.e., acute or chronic aquatic life criterion), the long-term average discharge condition (LTA) is calculated by multiplying the ECA by a factor (multiplier) that adjusts for effluent variability based on the coefficient of variation (CV) for the effluent pollutant concentration data. If (a) the number of effluent data points is less than ten, or (b) at least 80 percent of the data are reported as not detected, the CV is set equal to 0.6.

ECA Equations

$$\begin{aligned} ECA_{\text{multiplier}_{\text{acute99}}} &= e^{-(0.5\sigma^2 - z\sigma)} \\ ECA_{\text{multiplier}_{\text{chronic99}}} &= e^{-(0.5\sigma_4^2 - z\sigma_4)} \end{aligned}$$

Where

$$\begin{aligned} \sigma &= \text{standard deviation} \\ \sigma &= [\ln(CV^2 + 1)]^{0.5} \\ \sigma^2 &= \ln(CV^2 + 1) \\ \sigma_4 &= [\ln(CV^2/4 + 1)]^{0.5} \\ \sigma_4^2 &= \ln(CV^2/4 + 1) \\ z &= 2.326 \text{ for 99th percentile probability basis} \end{aligned}$$

LTA Equations

$$\begin{aligned} LTA_{\text{acute}} &= ECA_{\text{acute}} \times ECA_{\text{multiplier}_{\text{acute99}}} \\ LTA_{\text{chronic}} &= ECA_{\text{chronic}} \times ECA_{\text{multiplier}_{\text{chronic99}}} \end{aligned}$$

Using the lowest (most limiting) of the LTAs for the pollutant, an average monthly effluent limitation, AMEL, and a maximum daily effluent limitation, MDEL are

calculated by multiplying the most limiting LTA by a factor (multiplier) that adjusts for the averaging periods and exceedance frequencies of the criteria or objectives and the effluent limitations, and the effluent monitoring frequency as follows:

$$\text{AMEL}_{\text{aquatic life}} = \text{LTA} \times \text{AMEL}_{\text{multiplier95}}$$

$$\text{MDEL}_{\text{aquatic life}} = \text{LTA} \times \text{MDEL}_{\text{multiplier99}}$$

The AMEL and MDEL multipliers are calculated as described below using the previously calculated CV and the anticipated monthly sampling frequency (n) of the pollutant in the effluent. If the sampling frequency is four times a month or less, n is set equal to 4.

$$\text{AMEL}_{\text{multiplier95}} = e^{(z\sigma_n - 0.5\sigma_n^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2/n + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2/n + 1)$$

$z = 1.645$ for 95th percentile probability basis

n = number of samples per month

$$\text{MDEL}_{\text{multiplier99}} = e^{(z\sigma - 0.5\sigma^2)}$$

Where:

$$\sigma_n = [\ln(\text{CV}^2 + 1)]^{0.5}$$

$$\sigma_n^2 = \ln(\text{CV}^2 + 1)$$

$z = 2.326$ for 99th percentile probability basis

Sample Calculations for Copper based on Aquatic Life Criteria

Acute Effluent Concentration Allowance with no dilution

$$\text{ECA}_a = C = 23.08 \mu\text{g/L}$$

Chronic Effluent Concentration Allowance with no dilution

$$\text{ECA}_c = C_c = 14.68 \mu\text{g/L}$$

Long Term Average concentration based on acute ECA

$$\text{LTA}_a = 23.08 \mu\text{g/L} \times 0.495 = 11.43 \mu\text{g/L}$$

(where 0.495 = acute ECA multiplier at 99% occurrence probability; CV = 0.33)

Long Term Average concentration based on chronic ECA

$$\text{LTA}_c = 14.68 \mu\text{g/L} \times 0.690 = 10.12 \mu\text{g/L}$$

(where 0.69 = chronic ECA multiplier at 99% occurrence probability; CV = 0.33)

Most Limiting LTA concentration: LTA = 10.12 $\mu\text{g/L}$

Average Monthly Effluent Limitation

$$\text{AMEL} = \text{LTA} \times 1.295$$

(where 1.295 = AMEL multiplier at 95% occurrence probability; $n = 4$; $CV = 0.33$)

$$\text{AMEL} = 10.12 \mu\text{g/L} \times 1.295 = 13.10 \mu\text{g/L} = \mathbf{13 \mu\text{g/L}} \text{ (rounded)}$$

Maximum Daily Effluent Limitation

$$\text{MDEL} = \text{LTA} \times 2.019$$

(where 2.019 = MDEL multiplier at 99% occurrence probability; $CV = 0.33$)

$$\text{MDEL} = 10.12 \mu\text{g/L} \times 2.019 = 20.43 \mu\text{g/L} = \mathbf{20 \mu\text{g/L}} \text{ (rounded)}$$

Human Health Criterion or Objective

For the applicable human health criterion or objective, the AMEL is set equal to the ECA.

$$\text{AMEL}_{\text{human health}} = \text{ECA}$$

To calculate the MDEL for a human health criterion or objective, the ECA is multiplied by the ratio of the MDEL multiplier to the AMEL multiplier as specified in the SIP.

Sample Calculations for Chlorodibromomethane Based on Human Health Criteria

Effluent Concentration Allowance with no dilution

$$\text{ECA} = C = 0.41 \mu\text{g/L}$$

$$\text{AMEL} = \text{ECA} = \mathbf{0.41 \mu\text{g/L}}$$

$$\begin{aligned} \text{MDEL} &= \text{AMEL} \times (\text{MDEL multiplier} / \text{AMEL multiplier}) \\ &= 0.41 \mu\text{g/L} \times 3.176 \\ &= 1.302 \mu\text{g/L} = \mathbf{1.3 \mu\text{g/L}} \text{ (rounded)} \end{aligned}$$

Attachment I summarizes the factors used in the equations above to calculate WQBELs for the CTR parameters where the RPA determined that the discharge would cause, have reasonable potential to cause, or contribute to an excursion of water quality standards.

Mass-based limitations are calculated from concentration-based limitations using the equation provided in Section IV.B.2 and are based on the permitted flow for the

discharge to the Mojave River of 14.0 mgd. **Calculations of priority pollutant effluent limitations are, in general, rounded to two significant figures.**

WQBEL Calculation for Non-CTR Parameters

As noted above, downstream of the discharge, the Mojave River is, at times, composed entirely of effluent. No dilution credit is applied in calculations of WQBELs for the discharge to the Mojave River. For ammonia and methylene blue active substances (MBAS), the Water Board used statistical procedures based on the procedures in USEPA's 1991 *Technical Support Document for Water Quality-based Toxics Control* to translate water quality objectives into an MDEL and an AMEL. Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs) used to protect the MUN use have been treated as average monthly values and, consequently, established as the AMEL for the discharge.

Where necessary, the Water Board reviewed data submitted by the Discharger to determine a CV for calculating effluent limitations. The CVs for ammonia and for MBAS are included in Table 11 below. For some non-CTR parameters (e.g., pH and turbidity), the water quality objectives are applied directly as effluent limitations. For TDS, the limitations from Order No. 6-99-58 are carried over to this Order.

Mass-based limitations are calculated from concentration-based limitations using the equation provided in Section IV.B.2 and are based on the permitted flow for the discharge to the Mojave River of 14.0 mgd. These calculations are, in general, rounded to three significant figures.

Table 11. Summary of CV Used in Calculations for Non-CTR Pollutants

Parameter	Number of Observations < 10 or are ≥ 80% of Observations Reported as ND?	Coefficient of Variation (CV)
Ammonia Nitrogen, Total (as N)	No	0.55
Methylene Blue Active Substances (MBAS)	No	0.42

Conventional Pollutants

pH

The pH limitations of an instantaneous maximum of 8.5 standard units and instantaneous minimum of 6.5 standard units were established using the Basin Plan objective. Existing effluent data show that effluent pH has periodically been measured below the lower pH requirement of 6.5 standard units. Also, technology-based effluent limitations derived from secondary treatment standards require pH to be maintained within the range of 6.0 to 9.0 standard units and the existing Order (No. 6-99-58) established limitations requiring a pH range from 6.0 to 8.5 standard units. Therefore, pH limitations are necessary in this Order. To maintain consistency with the Basin Plan, the limitations in this Order are based on the Basin

Plan objective and are more stringent than either the technology-based effluent limitations or the effluent limitations in Order No. 6-99-58.

VVWRA currently is collecting data, including effluent and receiving water (Mojave River) monitoring for many constituents. After review and analysis of new or additional data, the Board may choose to reopen this Order to modify the final effluent limitations at Discharge Point 001 for pH to ensure that the discharge is compliance with the Basin Plan. New effluent limitations may be established to attain of all beneficial uses, water quality objectives, and nondegradation of water quality, as specified in the Basin Plan.

Fecal Coliform

The fecal coliform limitations were established using the Basin Plan Objective, which requires that the log mean during any 30-day period not exceed 20/100 mL and that no more than 10 percent of samples collected during any 30-day period exceed 40/100. Order No. 6-99-58 does not include effluent limitations for fecal coliform.

Non-Conventional Pollutants

Ammonia Nitrogen, Total (as N)

Water quality objectives for total ammonia nitrogen (as N) were calculated from Basin Plan Tables 3-1 and 3-3. These tables provide 1-hour and 4-day average criteria based on pH and temperature for waters designated as COLD. Based on downstream receiving water data for the month of August from 1999-2003 provided by the Discharger, a median pH value of 7.6 standard units (7.75 standard units using the Basin Plan tables) and a average temperature of 23.2 degrees Celsius (rounded to 25 degrees Celsius to use the Basin Plan tables) were used to calculate ammonia criteria of 5.9 mg/L (as N) as a 1-hour average and 0.96 mg/L (as N) as a 4-day average. The Water Board used the same procedures used for CTR aquatic life criteria to calculate WQBELs based on these aquatic life criteria for ammonia. From 1214 effluent data points for ammonia (as N) collected by the Discharger between January 2001 through March 2006, the Water Board calculated a CV of 0.55. Using the equations for determining the MDEL and AMEL discussed in Section IV C.4, the Water Board calculated the following effluent limitations for total ammonia nitrogen (as N).

AMEL = 0.80 mg/L (as N)

MDEL = 1.5 mg/L (as N)

Mass-based effluent limitations were calculated using the following formula:

Mass (lbs/day) = flow rate (MGD) × 8.34 × effluent limitation (mg/L)

Where: Mass = mass limitation for a pollutant (lbs/day)

Effluent limitation = concentration limit for a pollutant (mg/L)

Flow rate = discharge flow rate (MGD)

8.34 is a conversion factor

Using this formula, the following mass-based effluent limitation has been calculated for total ammonia nitrogen, and all other non-CTR pollutants, using a flow of 14.0 mgd:

AMEL = 93.4 lbs/day (as N)
MDEL = 175 lbs/day (as N)

Order No. 6-99-58 does not include effluent limitations for ammonia.

VVWRA currently is collecting data, including effluent and receiving water (Mojave River) monitoring for many constituents. After review and analysis of new or additional data, the Board may choose to reopen this Order to modify the final effluent limitations at Discharge Point 001 for total ammonia nitrogen to ensure that the discharge is in compliance with the Basin Plan. New effluent limitations may be established to attain all beneficial uses, water quality objectives, and nondegradation of water quality, as specified in the Basin Plan.

Total Residual Chlorine (TRC)

Order No. 6-99-58 contains effluent limitations for TRC that require a maximum 1-hour average TRC concentration of 0.019 mg/L and a 4-day average concentration of no more than 0.011 mg/L. The maximum daily discharge of chlorine of 1.3 lbs/day was based on the maximum instantaneous flow of 14 mgd.

This Order establishes an MDEL of 3 µg/L and a six-month median effluent limitation of 2 µg/L based on the Basin Plan water quality objectives for chlorine. These effluent limitations are more stringent than the existing effluent limitations (e.g., 1 hr average = 0.019 mg/L vs. a daily maximum of 0.003 mg/L).

MDEL = 3 µg/L (0.003 mg/L)
= 0.350 lbs/day

Six-Month Median = 2 µg/L (0.002 mg/L)
= 0.234 lbs/day

As discussed in Provision VII.A.2 of this Order, effluent limitations for TRC are below the expected minimum level (ML) for this constituent. Non-compliance with a TRC limitation is defined by exceeding both the limitation and the Reporting Level (RL). The Discharger must achieve the lowest possible RL for Total Residual Chlorine but, in no case, may the RL be greater than 0.1 mg/L.

Dissolved Oxygen

The Basin Plan objective (Table 3-6) for dissolved oxygen is 4 mg/L as an instantaneous minimum value. The dissolved oxygen limitation is established using the Basin Plan objective. The existing Order (No. 6-99-58) established an instantaneous minimum limitation of 1 mg/L. The limitation in this Order, based on

the Basin Plan objective, is more stringent than the effluent limitation in Order No. 6-99-58 and, therefore, there is no backsliding.

Methylene Blue Active Substances (MBAS)

The existing Order (No. 6-99-58) contains effluent limitations for MBAS which include a 30-day mean of 1.0 mg/L and 69 lbs/day; and a daily maximum of 2.0 mg/L and 138 lbs/day.

The Basin Plan Objective for Chemical Constituents (pages 3-4 and 3-5), Secondary MCLs for Foaming Agents, establishes the most stringent water quality objective for MBAS at 0.5 mg/L. Using the statistical procedures from USEPA's 1991 *Technical Support Document for Water Quality-based Toxics Control*, this Order establishes 0.5 mg/L as the AMEL and includes an MDEL based on the AMEL and a CV of 0.42. The CV was calculated from 345 data points collected by the Discharger between January 1999 and July 2005 and submitted to the Water Board.

AMEL = 0.5 mg/L
= 35 lbs/day
MDEL = 0.9 mg/L
= 62 lbs/day

The proposed limitations are more stringent than the existing limitations (e.g., AMEL of 0.5 mg/L vs. 1.0 mg/L) and, therefore, there is no backsliding.

Nitrate Nitrogen, Total (as N)

There is no applicable numeric water quality objective for nitrate in the Basin Plan applicable to the Mojave River surface water at the point of discharge for VVWRA. However, the Basin Plan has a chemical constituents objective for water designated MUN. The Basin Plan also implements, and incorporates by reference, California's Nondegradation Policy.

The Basin Plan states that waters designated as MUN shall not contain concentrations of chemical constituents in excess of the Maximum Contaminant Level or MCL. Therefore, the MCL of 10 mg/L of total nitrate-nitrogen (as N) establishes an upper water quality objective for nitrate. Effluent discharged into the Mojave River percolates into underlying groundwater. Water Board staff's evaluation to determine an appropriate nitrate-nitrogen water quality objective, protective of beneficial uses and consistent with the Nondegradation policy, follows.

California's Nondegradation Policy, State Water Board Resolution No 68-16, incorporates federal antidegradation policy required under 40 CFR 131.12. Resolution No 68-16 states, in part, that an increase in pollutant discharge must utilize best practical treatment and control to assure that (a) pollution or nuisance will not occur and (b) the highest water quality will be maintained consistent with the maximum benefit to the people of the State.

The discharger submitted the *River Antidegradation Analysis Report* on August 28, 2007. In this report, the discharger proposed tertiary treatment with biological nutrient removal for nitrogen. The discharger requested that, based on the proposed treatment process, a 12-month average effluent limitation of 10 mg/L for total nitrogen. The discharger submitted the *Addendum to Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant, River Discharge* on January 7, 2008. Following completion of nitrification and denitrification facilities, the discharger proposed a 12-month average effluent limitation of 5.0 mg/L for nitrate (as N).

The Water Board reviewed the supporting cost data submitted in the *River Antidegradation Analysis* and concurs that the proposed tertiary treatment facility with biological nutrient removal for nitrogen implements best practical treatment and control. Water Board then evaluated the discharger's requested proposed limit relative to the capability of the proposed treatment technology. Based on a review of the USEPA fact sheet *Biological Nutrient Removal Processes and Costs*, and discussions with other California State Regional Water Boards, the Water Board staff research shows the combination of biological nutrient removal and tertiary filtration can produce an effluent quality with an average long-term performance concentration of 6.0 mg/L for total nitrogen.

In treated wastewater with biological nutrient removal, total nitrogen consists of organic-nitrogen, ammonia-nitrogen, nitrite-nitrogen, and nitrate-nitrogen. The nitrification process usually oxidizes ammonia to nitrate, and nitrite-nitrogen is usually present in concentrations of less than 0.5 mg/L. In addition, most of the organic-nitrogen is consumed in the activated sludge and nitrification process. Therefore, for purposes of developing effluent limits for nitrate-nitrogen, the nitrate-nitrogen long-term average is the difference between the total nitrogen long-term average and the ammonia-nitrogen long-term average. As determined in the section for ammonia-nitrogen, the AMEL for ammonia nitrogen is 0.80. Using the CV of 0.55 and the 1214 effluent data points collected by the Discharger between January 2001 and March 2006 for ammonia-nitrogen, the long-term average concentration for ammonia nitrogen is $0.80 \div 1.17 = 0.70$ mg/L. Thus, the expected long-term performance concentration for nitrate-nitrogen is $6.0 \text{ mg/L} - 0.7 \text{ mg/L} = 5.3 \text{ mg/L}$.

The long-term performance concentration of 5.3 mg/L is more restrictive than the MCL of 10 mg/L. The Water Board selects the long-term performance concentration of 5.3 mg/L as the applicable basis for water quality based effluent limitations. The selected long-term performance concentration satisfies the pollution and nuisance requirement of the California's nondegradation policy because the long-term performance concentration is below the MCL. The selected long-term performance concentration also satisfies California's Nondegradation Policy requirement for "maximum benefit to the people of the State" because the data provided by the Discharger in the *River Antidegradation Analysis Report* shows that to achieve a more restrictive limit would result in an economic impact to the served population.

Based on information provided by the discharger in the August 2007 Antidegradation Analysis, Water Board staff evaluated the effect of different treatment technologies for total nitrogen reduction with respect to the average VVWRA user costs.

Table 11-a

Existing Treatment Costs 18 MGD (\$/user/mo)	Proposed MBR Treatment Costs 22 MGD (\$/user/mo)	Treatment Cost Increase (\$/user/mo)	Total Nitrogen Reduction from 11.6 mg/L Current to 6 mg/L after Proposed MBR	Incremental Increase in User Cost (\$ per mg/L reduction/user/mo)
\$12.87	\$20.26	\$7.39	5.6 mg/L	\$1.32
Proposed MBR Treatment Costs 22 MGD (\$/user/mo)	Possible RO Treatment Costs 22 MGD (\$/user/mo)	Treatment Cost Increase (\$/user/mo)	Total Nitrogen Reduction from 6 mg/L Proposed MBR to Possible RO 2 mg/L	Incremental Increase in User Cost (\$ per mg/L reduction/user/mo)
\$20.26	\$33.41	\$13.15	4 mg/L	\$3.29

The MBR technology is not likely to produce a lower long-term effluent total nitrogen concentration than 6 mg/L. Thus, the incremental monthly treatment user charge increase for each mg/L reduction in total nitrogen from 11.6 mg/L to 6 mg/L is \$1.32.

The discharger evaluated reverse osmosis technology to reduce the total effluent nitrogen concentration from 6 mg/L to 2 mg/L. The incremental monthly treatment user charge for each mg/L reduction from 6 mg/L to 2 mg/L is \$3.29. Thus, the incremental cost increase per mg/L of total nitrogen reduced is about 2.5 times greater for the reverse osmosis technology than for MBR technology. This would place an undue hardship on the community and affect economic growth and is not necessarily for the maximum benefit to the people of the State. After considering: (1) the MBR technology for planned upgrades, (2) the incremental cost increases to the VVWRA user fees with reverse osmosis technology, (3) added energy demand upon the state's energy grid with reverse osmosis technology, and (4) associated waste disposal costs for reverse osmosis brine, the planned MBR technology is the best practicable treatment or control of the discharge.

For purposes of calculating the AMEL and MDEL, the long-term performance concentration is the LTA. Because the limits are associated with a future discharge, the default CV is 0.6. The assumed number of samples per month is 4.

AMEL = 8.2 mg/L
= 957 lbs/day
MDEL = 11.3 mg/L
= 1320 lbs/day

VVWRA currently is collecting data, including effluent and receiving water (Mojave River) monitoring for many constituents. After review and analysis of new or additional data, the Board may choose to reopen this Order to modify the final effluent limitations at Discharge Point 001 for total nitrate nitrogen to ensure that the discharge is in compliance with the Basin Plan. New effluent limitations may be

established to attain all beneficial uses, water quality objectives, and nondegradation of water quality, as specified in the Basin Plan.

Order No. 6-99-58 does not include effluent limitations for nitrate.

Total Dissolved Solids (TDS)

There is no applicable numeric water quality objective for TDS in the Basin Plan applicable to the Mojave River surface water at the point of discharge for the Facility; however, the existing Order (No. 6-99-58) contains effluent limitations for TDS of 460 mg/L as a 12-month mean and a daily maximum of 580 mg/L. These effluent limitations are carried over to this Order as average annual and maximum daily effluent limitations; therefore, there is no backsliding.

VVWRA currently is collecting data, including effluent and receiving water (Mojave River) monitoring for many constituents. After review and analysis of new or additional data, the Board may choose to reopen this Order to modify the final effluent limitations for total dissolved solids at Discharge Point 001 to ensure that the discharge is compliance with the Basin Plan. New effluent limitations may be established to attain all beneficial uses, water quality objectives, and nondegradation of water quality, as specified in the Basin Plan.

Turbidity

Title 22 of the California Code of Regulations establishes requirements for disinfected tertiary recycled water use when applying the waters for landscaping and unrestricted access to golf courses, such as Westwinds. These requirements also protect the beneficial uses of the Mojave River [e.g., Agricultural Supply (AGR) and Contact Recreational Water (REC-1)]. Based on Title 22, turbidity effluent limitations will be established as: 2 NTU (average within a 24-hour period); 5 NTU (not to be exceeded more than 5 percent of the time in a 24-hour period); and 10 NTU (instantaneous maximum).

The existing Order (No. 6-99-58) required that the average turbidity of filtered wastewater not exceed an average turbidity of 2 NTU (30-day running average); and 5 NTU (not to be exceeded more than 5 percent of the time in a 24-hour period).

The application of the Title 22 requirements result in more stringent effluent limitations than in the existing Order (e.g., the 30-day running average established in Order No. 6-99-58 is now a 24-hour average and an instantaneous maximum was added).

Total Coliform

Title 22 of the California Code of Regulations establishes requirements for disinfected tertiary recycled water use when applying the waters for landscaping and unrestricted access to golf courses, such as Westwinds. These requirements also protect the beneficial uses of the Mojave River [e.g., Agricultural Supply (AGR) and

Contact Recreational Water (REC-1)]. Based on Title 22, total coliform limitations have been established as follows: the median concentration of total coliform bacteria shall not exceed an MPN of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed; the number of total coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and the number of total coliform bacteria shall not exceed an MPN of 240 per 100 mL (instantaneous maximum).

The existing Order (No. 6-99-58) established total coliform limitations of an MPN of 2.2 per 100 mL (median number of coliform organisms in the last seven-days for which analyses have been completed) and an MPN of 23 per 100 mL (no more than one sample in any 30-day period). The existing Order did not establish an instantaneous maximum limitation.

Table 12. Summary of Factors Used in WQBEL Calculations for Non-CTR Pollutants

Parameter (units)	Acute Aquatic Life Criterion	Chronic Aquatic Life Criterion	Human Health Criterion	Coefficient of Variation (CV)	Most Limiting LTA	AMEL	MDEL
Ammonia Nitrogen, Total (as N) (mg/L)	5.9	0.96	--	0.55	0.53	0.80	1.5
MBAS (mg/L)	--	--	0.5	--	--	--	0.5
Nitrate Nitrogen, Total (as N) (mg/L)	--	--	10	0.6	5.3 (as N) (BPTC)	8.2 (as N)	11.3 (as N)

5. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) tests measure the degree of response of exposed aquatic test organisms to an effluent to determine the aggregate toxic effect of a mixture of pollutants in the effluent. The WET approach allows for protection of narrative toxicity objectives or implementation of numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test generally is conducted over a longer period of time or during a critical life phase and may measure mortality, reproduction, growth, or other sub-lethal responses.

The Basin Plan specifies a narrative objective for toxicity, requiring that: "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Regional [Water] Board. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for

the same water body in areas unaffected by the waste discharge or, when necessary, for other control water..."

In addition, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

The Facility's discharge to the Mojave River at Discharge Point 001 is continuous, and there generally is little or no dilution of the discharge by the receiving water. Therefore, it is possible that the discharge could contribute to both acute and chronic toxic effects in the Mojave River.

The existing Order (No. 6-99-58) required both acute and chronic toxicity testing of effluent discharged at Discharge Point 001. In addition, the existing Order included receiving water limitations specifying that the discharge not cause acute or chronic toxicity in ambient waters. Acute toxicity was defined in the Receiving Water Limitations as less than 90 percent survival 50 percent of the time and less than 70 percent survival 10 percent of the time of standard test organisms in undiluted effluent in a 96-hour static or continuous-flow test. Chronic toxicity was defined in the MRP as a statistically significant difference at the 95-percent confidence level in survival or growth between test organisms exposed to an appropriate control water and undiluted effluent.

The Discharger summarized the results of WET testing in its permit renewal application. Acute toxicity testing showed a percent survival of 70-100 percent for *Pimephales promelas* in undiluted effluent. Chronic WET testing was conducted on the effluent and a control sample using *Pimephales promelas* (larvae survival and teratogenicity) and *Ceriodaphnia dubia* (survival and reproduction). The Discharger reported no significant difference between the control sample and a sample of 100% effluent in annual tests between 2000 and 2004. The Discharger reported no significant difference between the control sample and a sample of 100% receiving water in all but two annual tests between 2000 and 2004. There was a significant difference in *Pimephales promelas* survival and teratogenicity between receiving water sample taken from the Mojave River downstream of the discharge location and tested on January 23, 2001, and a control sample. There also was a significant difference in *Pimephales promelas* survival and teratogenicity between receiving water sample taken from the Mojave River upstream of the discharge location and tested on January 21, 2004, and a control sample.

From the reported data, it appears that the Discharger has not violated the receiving water limitations for acute or chronic toxicity in Order No. 6-99-58. Based on the occasional presence of some toxicity in the effluent, however, the proposed Order continues to include both acute and chronic WET monitoring requirements. In addition, the acute toxicity limitation from Order No. 6-99-58 are expressed as an Effluent Limitations, rather than receiving water limitations, because these requirements apply to undiluted effluent. The chronic toxicity requirements are expressed as Provisions in this Order and serve as triggers for accelerated testing and initiation of a toxicity reduction evaluation (TRE).

The definitions of acute and chronic toxicity in the effluent limitations have been modified for clarity; however, the underlying definitions (percent survival in undiluted effluent for acute toxicity and no significant difference in chronic toxicity between undiluted effluent and a control for chronic toxicity) are consistent with the definitions in Order No. 6-99-58.

PROPOSED

**Table 13. Summary of Water Quality-based Effluent Limitations – Discharge Point 001
(Based on 14.0 mgd Permitted Flow)**

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-month Median
Conventional Pollutants							
pH	standard units	--	--	--	6.5	8.5	--
Priority Pollutants							
Copper, Total Recoverable	mg/L	13	--	20	--	--	--
	lbs/day	1.5	--	2.3	--	--	--
Zinc, Total Recoverable	µg/L	77	--	190	--	--	--
	lbs/day	9.0	--	22	--	--	--
Cyanide, Total (as CN)	µg/L	3.6	--	9.6	--	--	--
	lbs/day	0.42	--	1.1	--	--	--
Chlorodibromomethane (Dibromochloromethane)	µg/L	0.41	--	1.3	--	--	--
	lbs/day	0.048	--	0.15	--	--	--
Dichlorobromomethane (Bromodichloromethane)	µg/L	0.56	--	1.4	--	--	--
	lbs/day	0.065	--	0.16	--	--	--
Bis(2-ethylhexyl) phthalate	µg/L	1.8	--	3.6	--	--	--
	lbs/day	0.21	--	0.42	--	--	--
Dibenzo(a,h)anthracene	µg/L	0.0044	--	0.0088	--	--	--
	lbs/day	0.00051	--	0.0010	--	--	--
Non-conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	0.80	--	1.5	--	--	--
	lbs/day	93.4	--	175	--	--	--
Chlorine, Total Residual ¹	mg/L	--	--	0.003	--	--	0.002
	lbs/day	--	--	0.350	--	--	0.234
Dissolved Oxygen	mg/L	--	--	--	4.0	--	--
Methylene Blue Active Substances (MBAS)	mg/L	0.50	--	0.90	--	--	--
	lbs/day	58.4	--	105	--	--	--
Nitrate Nitrogen, Total	mg/L	8.2	--	11.3	--	--	--

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-month Median
(as N)	lbs/day	957	--	1320	--	--	--
Total Dissolved Solids (TDS)	mg/L	--	--	580	--	--	--
	lbs/day	--	--	67,700	--	--	53,700

"--" = not applicable

¹ Effluent limitations for Total Residual Chlorine are below the expected minimum level (ML) for this constituent. Non-compliance with a Total Residual Chlorine limitation is defined by exceeding both the limitation and the ML. The Discharger must achieve the lowest possible ML for Total Residual Chlorine but, in no case, may the ML be greater than 0.1 mg/L.

09-0132

Fecal Coliform

Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of fecal coliform bacteria shall not exceed either of the following:

- A log mean of 20 per 100 mL for any 30-day period
- 40 per 100 mL in more than 10 percent of all of the samples collected in any 30-day period.

Total Coliform

Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of total coliform bacteria shall not exceed any of the following:

- A median Most Probable Number (MPN) of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed
- An MPN of 23 per 100 mL in more than one sample in any 30-day period
- An MPN of 240 per 100 mL at any time (instantaneous maximum).

Turbidity

Effluent shall be a filtered wastewater that does not exceed any of the following:

- An average of 2 NTU within a 24-hour period
- 5 NTU more than 5 percent of the time in a 24-hour period
- 10 NTU at any time (instantaneous maximum).

Acute Toxicity

The effluent shall not exhibit acute toxicity, defined as:

- Less than 90 percent survival of *Pimephales promelas* in undiluted effluent in ≥ 50 percent of the samples in a calendar year; or
- Less than 70 percent survival of *Pimephales promelas* in undiluted effluent in ≥ 10 percent of the samples in a calendar year.

Acute whole effluent toxicity (WET) testing shall be conducted in accordance with the requirements specified in the Monitoring and Reporting Program (Attachment E).

D. Final Effluent Limitations

Table 14 and the text that follows the table summarize the final effluent limitations included in the proposed Order. The more stringent requirements of the technology-based effluent limitations and the water quality-based effluent limitations are included in the table as the final effluent limitations.

**Table 14. Summary of Final Effluent Limitations – Discharge Point 001
(Based on 14.0 mgd Permitted Flow)**

Parameter	Units	Final Effluent Limitations						Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median	
Conventional Pollutants								
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	10	15	30	--	--	--	E
	lbs/day	1,170	1,750	3,500	--	--	--	E
pH	standard units	--	--	--	6.5	8.5	--	WQO
Total Suspended Solids	mg/L	10	15	30	--	--	--	E
	lbs/day	1,170	1,750	3,500	--	--	--	E
Priority Pollutants								
Copper, Total Recoverable	µg/L	13	--	20	--	--	--	CTR
	lbs/day	1.5	--	2.3	--	--	--	CTR
Zinc, Total Recoverable	µg/L	77	--	190	--	--	--	CTR
	lbs/day	9.0	--	22	--	--	--	CTR
Cyanide, Total (as CN)	µg/L	3.6	--	9.6	--	--	--	CTR
	lbs/day	0.42	--	1.1	--	--	--	CTR
Chlorodibromomethane (Dibromochloromethane)	µg/L	0.41	--	1.3	--	--	--	CTR
	lbs/day	0.048	--	0.15	--	--	--	CTR
Dichlorobromomethane (Bromodichloromethane)	µg/L	0.56	--	1.4	--	--	--	CTR
	lbs/day	0.065	--	0.16	--	--	--	CTR
Bis(2-ethylhexyl)phthalate	µg/L	1.8	--	3.6	--	--	--	CTR
	lbs/day	0.21	--	0.42	--	--	--	CTR
Dibenzo(a,h)anthracene	µg/L	0.0044	--	0.0088	--	--	--	CTR
	lbs/day	0.00051	--	0.0010	--	--	--	CTR

Parameter	Units	Final Effluent Limitations						Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median	
Non-Conventional Pollutants								
Ammonia Nitrogen, Total (as N)	mg/L	0.80	--	1.5	--	--	--	WQO
	lbs/day	93.4	--	175	--	--	--	WQO
Chlorine, Total Residual ²	mg/L	--	--	0.003	--	--	0.002	WQO
	lbs/day	--	--	0.350	--	--	0.234	WQO
Dissolved Oxygen	mg/L	--	--	--	4.0	--	--	WQO
Methylene Blue Active Substances (MBAS)	mg/L	0.50	--	0.90	--	--	--	WQO
	lbs/day	58.4	--	105	--	--	--	WQO
Nitrate Nitrogen, Total (as N)	mg/L	8.2	--	11.3	--	--	--	WQO /A
	lbs/day	957	--	1320	--	--	--	WQO /A
Total Dissolved Solids (TDS)	mg/L	--	--	580	--	--	--	E
	lbs/day	--	--	67700	--	--	--	E

"--" = not applicable

¹ E=Existing Permit (Order No. 6-99-58); CTR=California Toxic Rule; WQOs=Basin Plan Water Quality Objectives; A=Antidegradation Policy

² Concentration-based effluent limitations for Total Residual Chlorine are below the expected minimum level (ML) for this constituent. Non-compliance with a Total Residual Chlorine limitation is defined by exceeding both the limitation and the Reporting Level (RL) used by the Discharger. The Discharger must achieve the lowest possible RL for Total Residual Chlorine but, in no case, may the RL be greater than 0.1 mg/L.

Flow

The average annual flow of effluent discharged to the Mojave River shall not exceed 14.0 million gallons per day (mgd) in any calendar year.

Water Board staff considered both annual and monthly average maximum flow limits. Neither affects the mass limits, which are based on 14 MGD. The Water Board did not propose changing the mass limits to reflect a potentially higher daily or monthly flow. If an annual average flow limit is 14 MGD, VVWRA could have monthly and daily flows that exceed 14 MGD by a wide margin and still be able to meet the annual flow limit. Flows too far above 14 MGD on a daily or monthly basis would cause violations in meeting daily or monthly mass-based limits. However, VVWRA wants operational flexibility to discharge at higher rates at certain times of the year. For this reason, the flow limit is an annual average. However, mass based effluent limits are based upon a maximum daily flow rate.

BOD/TSS Percent Removal

The average monthly percent removal for Biochemical Oxygen Demand (5-day @ 20° C) and Total Suspended Solids shall be at least 85 percent.

Fecal Coliform

Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of fecal coliform bacteria shall not exceed either of the following:

- A log mean of 20 per 100 mL for any 30-day period
- 40 per 100 mL in more than 10 percent of all of the samples collected in any 30 day period.

Total Coliform

Effluent at all times shall be an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The number of total coliform bacteria shall not exceed any of the following:

- A median Most Probable Number (MPN) of 2.2 per 100 mL based on the results of the last seven days for which analyses have been completed
- An MPN of 23 per 100 mL in more than one sample in any 30-day period
- An MPN of 240 per 100 mL at any time (instantaneous maximum).

Turbidity

Effluent shall be a filtered wastewater that does not exceed any of the following:

- An average of 2 NTU within a 24-hour period
- 5 NTU more than 5 percent of the time in a 24-hour period
- 10 NTU at any time (instantaneous maximum).

Acute Toxicity

The effluent shall not exhibit acute toxicity, defined as:

- Less than 90 percent survival of *Pimephales promelas* in undiluted effluent in \geq 50 percent of the samples in a calendar year; or
- Less than 70 percent survival of *Pimephales promelas* in undiluted effluent in \geq 10 percent of the samples in a calendar year.

Acute whole effluent toxicity (WET) testing shall be conducted in accordance with the requirements specified in the Monitoring and Reporting Program (Attachment E).

E. Interim Effluent Limitations

The RPA conducted for the discharge to the Mojave River indicates that reasonable potential exists for the CTR pollutants copper, zinc, cyanide, chlorodibromomethane, dichlorobromomethane, bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene. Reasonable potential also exists for the non-CTR pollutants total ammonia nitrogen, and total nitrate nitrogen. Order No. 6-99-58 did not include effluent limitations for these CTR and non-CTR pollutants and pollutants. Order No. 6-99-58 established effluent limitations for pH, total residual chlorine (TRC), dissolved oxygen, and methylene blue active substances (MBAS), but this Order includes effluent limitations more stringent than the effluent limitations in Order No. 6-99-58.

40 CFR section 131.38(e) provides conditions under which interim effluent limitations and compliance schedules may be issued for CTR pollutants. In addition, 40 CFR section 122.47 generally governs compliance schedules in NPDES permits. Effluent limitations based on CTR pollutants must comply with the provisions of the SIP [40 C.F.R. section 131.38(e)(6) and the SIP, Section 2.1]. The SIP allows inclusion of an interim limitation with a specific compliance schedule for the final effluent limitation in an NPDES permit for priority pollutants if the final limitation for the priority pollutant is based on CTR criteria and the Discharger demonstrates that it is infeasible to achieve immediate compliance with the effluent limitation. The Basin Plan does not provide the authority to include in a permit compliance schedules and interim effluent limitations for non-CTR pollutants.

CTR Pollutants

Based on the effluent data submitted to the Water Board, it appears that it is feasible for the Discharger to comply immediately with the new CTR-based effluent limitations for copper. Therefore, the proposed Order does not include interim limitations and a compliance schedule for copper.

Based on existing data submitted by the Discharger, the Water Board has determined that it is infeasible for the Discharger to comply immediately with the CTR-based effluent limitations for zinc, cyanide, chlorodibromomethane, dichlorobromomethane, bis[2-ethylhexyl]phthalate, and dibenzo (a,h) anthracene. Interim effluent limitations and compliance schedules for these pollutants are included in the proposed Order.

In addition, for non-CTR pollutants, it appears that the Discharger will be unable to comply with all final effluent limitations. The Basin Plan does not provide the authority to include compliance schedules and interim effluent limitations for non-CTR pollutants.

Pursuant to the SIP (Section 2.2.1, Interim Requirements under a Compliance Schedule), when compliance schedules are established in an Order, interim effluent limitations must be included based on current treatment Facility performance or existing permit limitations, whichever is more stringent, to maintain existing water quality. Order No. 6-99-58 does not include effluent limitations for zinc, chlorodibromomethane, dichlorobromomethane, bis(2-ethylhexyl)phthalate or dibenzo(a,h)anthracene. Therefore, the current performance will serve as the basis for the interim effluent limitations, effective until **May 18, 2010**, after which, the Discharger must comply with the final effluent limitations for these pollutants for Discharge Point 001.

In developing the interim limitations, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim maximum daily effluent limitations in this Order are established as the mean plus 3.3 standard deviations of the available data. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the observed maximum effluent concentration (MEC) has been established as the interim maximum daily effluent limitation.

When there are less than ten sampling data points available, the *Technical Support Document for Water Quality-Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be used as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten data points for a constituent, interim limitations are based on 3.11 times the observed MEC to obtain the interim maximum daily effluent limitation (TSD, Table 5 2).

The SIP requires that the Water Board establish other interim requirements, such as requiring the Discharger to develop a pollutant minimization plan and/or source control measures, and participate in the activities necessary to achieve the final effluent limitations. By **six months following the effective date of this Order**, the Discharger must prepare and submit a compliance plan that describes the steps that will be taken to ensure compliance with applicable limitations.

The interim effluent limitations for CTR pollutants are summarized in Table 15 below.

**Table 15. Summary of Interim Effluent Limitations for CTR Pollutants
– Discharge Point 001 (Based on 14.0 mgd Permitted Flow)**

Parameter	Units	Number of Detected Data Points	MEC ¹	Statistically-Based Maximum	Interim Maximum Daily Effluent Limitation (MDEL)	Basis
Zinc, Total Recoverable	µg/L	19	240	210	240	MEC
	lbs/day		28	24	28	MEC
Cyanide	µg/L	8	7	23	23	3.11 × MEC
	lbs/day		0.82	2.7	2.7	3.11 × MEC
Chlorodibromomethane (Dibromochloromethane)	µg/L	13	30	24	30	MEC
	lbs/day		3.5	2.8	3.5	MEC
Dichlorobromomethane (Bromodichloromethane)	µg/L	15	17	18	18	Mean + 3.3 SD
	lbs/day		2.0	2.1	2.1	Mean + 3.3 SD
Bis(2-ethylhexyl)phthalate	µg/L	3	15	47	47	3.11 × MEC
	lbs/day		1.8	5.5	5.5	3.11 × MEC
Dibenzo(a,h)anthracene	µg/L	1	0.06	0.19	0.19	3.11 × MEC
	lbs/day		0.0070	0.022	0.022	3.11 × MEC

¹ Maximum mass estimated based on MEC at 14.0 mgd flow.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Lahontan Region. Water quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (40 CFR § 131.12) and State Water Board Resolution No. 68-16. Surface water limitations in this Order are included to ensure protection of background water quality and beneficial uses of the receiving water.

B. Groundwater

The Basin Plan contains numeric and narrative water quality objectives applicable to all ground waters within the Lahontan Region. Groundwater quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (40 CFR § 131.12) and State Water Board Resolution No. 68-16. Groundwater limitations in this Order are included to ensure protection of background water quality and beneficial uses of groundwater that may be affected by discharges to the Mojave River.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Order No. 6-99-58 included influent monitoring for BOD, MBAS, COD, the nitrogen series, total petroleum hydrocarbons and CTR pollutants. In an effort to reduce sampling costs, some influent monitoring requirements have been dropped as unnecessary. The influent monitoring included in this order is required to collect information to determine compliance with effluent limitations, to collect information about nitrogen at the Facility, and to determine the percent removal of TSS and BOD in the treatment process. The Discharger must monitor influent prior to the primary clarifiers (INF-001).

Table 17. Summary of Influent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hour composite	4/week ¹	40 CFR Part 136 Methods
Total Suspended Solids (TSS)	mg/L	24-hour composite	4/week ²	40 CFR Part 136 Methods
Ammonia Nitrogen Total (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Flow	mgd	Measure	1/day	See General Monitoring Provisions (Section I)
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/month	40 CFR Part 136 Methods
Conductivity	µmhos/cm	Continuous	1/day	40 CFR Part 136 Methods
pH	standard units	Continuous	1/day	40 CFR Part 136 Methods

¹ Conducted at approximately the same time as effluent monitoring for BOD (5-day @ 20°C).

² Conducted at approximately the same time as effluent monitoring for TSS.

No other influent monitoring is required.

B. Effluent Monitoring – Monitoring Location EFF-001

Order No. 6-99-58 established effluent monitoring requirements. In general, these monitoring requirements are carried over to the proposed Order (e.g., flow, pH, turbidity, TSS, BOD, TDS, oil and grease, sulfate, and total residual chlorine). Some monitoring requirements (e.g., COD) have been removed, since this monitoring is not necessary to determine compliance with effluent limitations. Monitoring for parameters with newly established effluent limitations has been added. Monitoring for some pollutants for which there are no effluent limitations (e.g., boron, chloride) is included for both the effluent and the receiving water in order to assess the potential impact of the discharge on beneficial uses of the Mojave River.

The Discharger is required to analyze effluent samples for CTR priority pollutants annually for the life of the permit as described in IV.C.3 to determine the presence of these pollutants in the discharge and provide data for future reasonable potential assessments. Monitoring is more frequent for CTR pollutants for which effluent limitations have been established in the Order to demonstrate compliance with the limitations.

Effluent from the treatment Facility to the Mojave River at Discharge Point 001 must be monitored at the sample box before the Parshall Flume (EFF-001) and be representative of the effluent discharged to the Mojave River.

Table 18, below, summarizes monitoring requirements for Monitoring Point EFF-001. In addition, quarterly acute toxicity sampling and annually chronic toxicity sampling are carried over from the previous Order.

Because nitrogen effluent limitations are newly added and because major plant upgrades are in progress, 2 samples for month for the nitrogen series (ammonia, nitrite, nitrate, total kjeldahl nitrogen) is the minimum Water Board staff believes necessary to determine compliance with interim and final effluent limitations during this permit cycle.

Table 18. Summary of Effluent Monitoring Requirements (EFF-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹ and (Minimum Level, units)
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hour composite	4/week	40 CFR Part 136 Methods
Biochemical Oxygen Demand (BOD) (5-day @ 20°C), Percent Removal	% (percent)	Calculate	4/week	
Fecal Coliform ²	MPN/100 mL	Grab	5 evenly spaced in one 30-day period/yr.	40 CFR Part 136 Methods
Oil and Grease	mg/L	Grab	1/quarter	40 CFR Part 136 Methods
pH	standard units	Continuous	1/day	40 CFR Part 136 Methods
Conductivity	µmhos/cm	Grab	1/day	40 CFR Part 136 Methods
Total Suspended Solids (TSS)	mg/L	24-hour composite	4/week	40 CFR Part 136 Methods
Total Suspended Solids (TSS), Percent Removal	% (percent)	Calculate	4/week	--
Priority Pollutants				
Copper, Total Recoverable	µg/L, lbs/day ³	Grab	1/month	GFAA (ML= 5 µg/L);or ICP (ML = 10 µg/L);or ICPMS (ML= 0.5 µg/L);or SPGFAA (ML = 2 µg/L)
Zinc, Total Recoverable	µg/L, lbs/day ³	Grab	1/month	FAA (ML= 20 µg/L);or ICP (ML = 20 µg/L);or ICPMS (ML= 1 µg/L);or SPGFAA (ML = 10 µg/L)
Cyanide, Total (as CN)	µg/L, lbs/day ³	Grab	1/month	COLOR (ML = 5)
Chlorodibromomethane (Dibromochloromethane)	µg/L, lbs/day ³	Grab	1/month	GC (ML = 0.5)
Dichlorobromomethane (Bromodichloromethane)	µg/L, lbs/day ³	Grab	1/month	GC (ML = 0.5)
Bis(2-ethylhexyl)phthalate ²	µg/L, lbs/day ³	Grab	1/month	GCMS (ML = 5)
Dibenzo(a,h)anthracene	µg/L, lbs/day ³	Grab	1/month	LC (ML = 0.1)
Remaining CTR Priority Pollutants	µg/L	Grab	1/year	40 CFR Part 136 Methods
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Boron, Total Recoverable	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Chloride	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Chlorine, Total Residual	mg/L, lbs/day ³	Grab	1/month	40 CFR Part 136 Methods
Dissolved Oxygen	mg/L	Grab	1/week	40 CFR Part 136 Methods
Fluoride, Total	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Flow	Mgd	Measure	1/day	See General Monitoring Provisions (Section I)
Hardness, Total (as CaCO ₃) ⁴	mg/L	Grab	1/quarter	40 CFR Part 136 Methods
Methylene Blue Active Substances (MBAS)	mg/L, lbs/day ³	24-hour composite	1/month	Method approved by Executive Officer

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹ and (Minimum Level, units)
Nitrate Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Nitrite Nitrogen, Total (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Sodium, Total	mg/L, lbs/day ³	Grab	1/month	40 CFR Part 136 Methods
Sulfate, Total (as SO ₄)	mg/L, lbs/day ³	Grab	1/quarter	40 CFR Part 136 Methods
Temperature	°C	Grab	1/week	40 CFR Part 136 Methods
Total Coliform ²	MPN/100 mL	Grab	1/day	40 CFR Part 136 Methods
Total Dissolved Solids (TDS)	mg/L, lbs/day ³	24-hour composite	1/month	40 CFR Part 136 Methods
Total Kjeldahl Nitrogen (as N)	mg/L, lbs/day ³	Grab	2/month	40 CFR Part 136 Methods
Turbidity	NTU	Measure	1/day	40 CFR Part 136 Methods
Whole Effluent Toxicity, Acute	See Section V.A below			
Whole Effluent Toxicity, Chronic	See Section V.B below			

¹ Where more than one approved method is available, the Discharger shall ensure that, where possible, the method detection limit (MDL) and the minimum level (ML) are less than the most stringent effluent limitation. Where the most stringent effluent limitation is less than the MDL for all approved methods, the Discharger shall select the method with the lowest MDL. Where no 40 CFR Part 136 method is available, the Discharger shall use a method approved by the Executive Officer. For Priority Pollutants where test methods are specified in the table above, the methods are as follows:

- GC = Gas Chromatography
- CGMS = Gas Chromatography/Mass Spectroscopy
- LC = High Pressure Liquid Chromatography
- GFAA = Graphite Furnace Atomic Absorption
- SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption
- ICP = Inductively Coupled Plasma
- ICPMS = Inductively Coupled Plasma/Mass Spectroscopy
- COLOR = Colorimetric

² Based on 2007 data for total coliform included with the January 22, 2008 memorandum from Gina Cloutier, VVWRA Laboratory Supervisor, included with the VVWRA letter dated January 23, 2008, the total coliform MPN measurements show that the fecal coliform effluent limitations were not exceeded for the entire year. Therefore, fecal coliform monitoring is reduced to a minimum five samples evenly spaced in any 30-day period per year. Water Board staff finds it is acceptable for VVWRA to use its in-house laboratory to analyze fecal coliform until Department of Health Services certification of this constituent is completed, expected for November 2008. Until such certification is obtained, VVWRA shall report the status of certification with each fecal coliform sample result submitted, until certification is obtained.

³ The mass emission (in lbs/day) for the regulated pollutants in the discharge shall be calculated and reported using the limitation concentration and the actual flow rate measured at the time of discharge and the formula:

$$m = 8.34 C_1 Q$$

where: m = mass discharge for a pollutant, lbs/day

C₁ = concentration for a pollutant, mg/L

Q = actual discharge flow rate, mgd

⁴ Hardness shall be measured concurrently with total recoverable copper and total recoverable zinc.

C. Land Discharge Monitoring – Not Applicable (See Order No. 6-99-58.)

This Order establishes no minimum groundwater monitoring requirements, which are contained in Order 6-99-58. However, in order to evaluate the effects of the discharge on receiving groundwater, the monitoring program requires data to be submitted in the next self monitoring report from the following wells when they are sampled: OW-1, NW-1, NW-2, NW-3, OW-6, SP-1, SP-2, SP-3, SP-4, LW-1, LW-2, LW-3, LW-4.

Because groundwater is polluted with nitrate beneath the new south percolation ponds, a separate groundwater investigation is pending. As part of the study, this Order requires the Discharger to propose a minimum of two groundwater monitoring wells down gradient of well OW-6. in the Mojave River Floodplain Aquifer to evaluate the effects of the discharge on receiving groundwater.

D. Reclamation Monitoring Requirements – Not Applicable (See Order No. 6-99-58 and Order No. R6V-2003-28)

E. Whole Effluent Toxicity Testing Requirements

Acute whole effluent toxicity testing is included in the Monitoring and Reporting Program to measure compliance with acute whole effluent toxicity limitations. The test methods and sampling frequencies are carried over from Order No. 6-99-58.

The Facility's discharge to the Mojave River at Discharge Point 001 is continuous, and there generally is little or no dilution of the discharge by the receiving water. Therefore, it is possible that the discharge could contribute to both acute and chronic toxic effects in the Mojave River.

The existing Order (No. 6-99-58) required both acute and chronic toxicity testing of effluent discharged at Discharge Point 001.

As noted above, the Discharger summarized the results of WET testing in its permit renewal application. Chronic WET testing was conducted on the effluent and a control sample using *Pimephales promelas* (larvae survival and teratogenicity) and *Ceriodaphnia dubia* (survival and reproduction). The Discharger reported, in WET data resubmitted on February 3, 2006, no significant difference between the control sample and a sample of 100% effluent in annual tests between 2000 and 2004. The Discharger reported no significant difference between the control sample and a sample of 100% receiving water in all but two annual tests between 2000 and 2004. There was a significant difference in *Pimephales promelas* survival and teratogenicity between receiving water sample taken from the Mojave River downstream of the discharge location and tested on January 23, 2001, and a control sample. There also was a significant difference in *Pimephales promelas* survival and teratogenicity between receiving water sample taken from the Mojave River upstream of the discharge location and tested on January 21, 2004, and a control sample.

From the resubmitted data, it appears that the Discharger has not violated the receiving water limitations for acute or chronic toxicity in Order No. 6-99-58. Based on the

occasional presence of some toxicity in the effluent and receiving water, however, the proposed Order continues to include both acute and chronic WET monitoring requirements, as in Order No. 6-99-58.

F. Receiving Water Monitoring

1. Surface Water (RSW-001; RSW-002; RSW-003; RSW-004)

Two sampling stations have been established on the Mojave River at sites approved by the Executive Officer; one sampling station (e.g., RW-001) is located 4.1 miles upstream (south) of the confluence of the Facility discharge with the Mojave River at a point in the channel immediately upstream of the Old National Trails Bridge on Route 66, near the USGS Gaging Station. This sampling station is approximately 0.2 miles upstream (south) of the sampling location in the previous Order, which was north of the Old National Trails Bridge. Access can be gained through the Rockview Nature Park, City of Victorville. The second sampling station (e.g., RW-002) is located in the channel 1.75 miles downstream (north) of the confluence of the Facility discharge with the Mojave River at a point west of the intersection of Robertson Ranch Road and National Trails Highway. In addition, the Discharger is required to add two new surface water sampling stations, RSW-003 and RSW-004. These stations must be established at an intermediate location between the point of discharge to the Mojave River and RSW-002 with the exact location to be proposed by the Discharger and approved by the Water Board Executive Officer.

Surface water monitoring is needed to measure compliance with receiving water limitations, particularly where no effluent limitations have been established. The minimum sampling frequency (1/quarter) is carried over from Order No. 6-99-58.

Table 19. Summary of Surface Water Monitoring Requirements (RSW-001, RSW-002, RSW-003, RSW-004)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Ammonia Nitrogen, Total (as N)	Mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Boron, Total Recoverable	Mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Chloride	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Chlorine, Total Residual	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Dissolved Oxygen	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Fluoride, Total	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Hardness, Total (CaCO ₃)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Haloacetic Acids, Total	µg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrate Nitrogen, Total (as NO ₃)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Nitrite Nitrogen, Total (as NO ₂)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Orthophosphate (as P)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Sulfate, Total (as SO ₄)	mg/L	Grab	1/year	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Temperature	°F	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Total Coliform	MPN/100 mL	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Trihalomethane, Total	µg/L	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer
Turbidity	NTU	Grab	1/quarter	40 CFR Part 136 Methods or Other Method Approved by Executive Officer

In addition, chronic aquatic toxicity monitoring is required to demonstrate compliance with the Nondegradation of Aquatic Communities and Populations Basin Plan water quality objective and receiving water limitation in this Order.

2. Groundwater – (See Order No. 6-99-58)

Order No. 6-99-58 requires receiving groundwater monitoring. Because the Mojave River is an effluent dominated stream downstream of the VVWRA, receiving groundwater is affected by the surface water discharge as effluent percolates. To determine the effect of surface water discharges on the receiving groundwater, the Monitoring and Reporting Program for this Order requires that data collected from monitoring wells located along the Mojave River to be reported after each sampling event along with the monitoring data required in this Order. Additionally, this Order requires that additional downstream monitoring wells be proposed separately to evaluate the interaction between surface water discharges and groundwater quality.

G. Other Monitoring Requirements

1. Pretreatment Monitoring

Pretreatment monitoring requirements are based on the previous Order and 40 CFR Part 403.

2. Biosolids Monitoring

Biosolids monitoring requirements are based on the previous Order and 40 CFR Part 503.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

Conditions that necessitate a major modification of a permit are described in 40 CFR §122.62, which include the following:

(a) *When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision.* Therefore, if more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Water Board will revise and modify this Order in accordance with such more stringent standards.

(b) *When new information that would justify different permit conditions becomes available,* the Water Board may reopen this Order and modify the effluent limitations or add final water quality-based effluent limitations as appropriate. The Discharger is conducting special effluent and receiving water monitoring. The Water Board may reopen this Order to evaluate the impact of any past or potential future operations on receiving waters. In addition, this Order includes provisions allowing the Discharger to conduct an optional metals translator study for copper and/or zinc and a water effects ratio study for ammonia nitrogen. Upon submission of and based on the results of these studies, the Water Board may reopen this Order to reconsider and modify, if appropriate, the final effluent limitations established in this Order for these constituents. This Order also includes a provision for an optional monitoring study for cyanide, bis(2-ethylhexyl)phthalate, and dibenzo (a,h,)anthracene. Upon submission of and based on the results of this study, the Water Board may reopen this Order to reconsider the reasonable potential determinations for cyanide, bis(2-ethylhexyl)phthalate, and dibenzo (a,h,)anthracene and remove or modify, if appropriate, the final effluent limitations established in this Order for these constituents.

(c) *When Facility alterations or changes in operations justify new conditions that are different from the existing permit.* This Order may be modified to include appropriate conditions or limitations to address demonstrated effluent toxicity based on newly available information. In addition, the discharge of a new chemical that is found to have reasonable potential to cause, or contribute to an in-stream excursion above any chemical-specific water quality criteria, narrative water quality objective for chemical constituents from the Basin Plan, or narrative water quality objective for toxicity from the Basin Plan, would be considered a change in Facility operations that requires reopening this Order to establish new effluent limitations.

09-0148

2. Special Studies and Additional Monitoring Requirements

- a. **Toxicity Identification Evaluations or Toxicity Reduction Evaluations.** By Three Months After the Effective Date of this Order, the Discharger is required to submit to the Water Board an initial investigation Toxicity Reduction Evaluation (TRE) work plan. This plan generally describes the steps the Discharger intends to follow if acute or chronic toxicity is detected during accelerated acute WET testing or chronic WET testing as specified in the Monitoring and Reporting Program (Attachment E). The plan is required in order to ensure continued compliance with WET limitations and requirements in the Order; to ensure attainment of the toxicity objective in the Basin Plan; and to ensure protection of beneficial uses of the Mojave River.
- b. **Optional Studies.** The Discharger may develop and submit to the Water Board for its consideration a translator study for copper or zinc or for both metals. Upon completion of the study and submission of the study results, the Water Board may, based on the results, reopen this Order to modify the final effluent limitations for copper and zinc in accordance with the Provisions in Section VI.C.1.d of this Order.

The Discharger also may conduct and submit a study involving development of a water effects ratio (WER) for ammonia. Upon completion of the study and submission of the study results, the Water Board may, subsequent to any Basin Plan amendment adopted by the Water Board and approved by USEPA, modify the final effluent limitations for ammonia, in accordance with the Provisions in Section VI.C.1.d of this Order.

In addition, the Discharger may conduct and submit to the Water Board for its consideration a study involving collection of additional, reliable ambient and effluent monitoring data for cyanide, bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene. Upon completion of the study and submission of the study results, the Water Board may, based on the results, reconsider the reasonable potential determinations or modify the final effluent limitations for cyanide, bis(2-ethylhexyl)phthalate, and/or dibenzo (a,h,)anthracene in accordance with the Provisions in Section VI.C.1.d of this Order.

These studies are optional and may be initiated by the Discharger at its discretion.

3. Best Management Practices and Pollution Prevention

- a. **Pollutant Minimization Program (PMP).** The PMP required in this Order is necessary to address pollutants for which there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- i. A sample result is reported as "detected, but not quantified" (DNQ) and the effluent limitation is less than the Reporting Limit (RL); or
- ii. A sample result is reported as "not detected" (ND) and the effluent limitation is less than the Method Detection Limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

- b. **Best Management Practices (BMPs).** This Order references the requirement for the Discharger to identify, implement, and monitor BMPs in accordance with a site specific Storm Water Pollution Prevention Plan (SWPPP) as required under the General Industrial Storm Water Permit. The Discharger has applied for coverage under this permit and is regulated under Waste Discharge Identification Number 6B36I005756.

4. Construction, Operation, and Maintenance Specifications

These provisions are based on the requirements of 40 CFR 122.41(e) and the existing Order.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Pretreatment Program Requirements.** Requirements are based on the previous Order and 40 CFR Part 403.
- b. **Sludge Disposal Requirements.** Requirements are based on previous Order and 40 CFR Part 503.

6. Other Special Provisions

Order Continuation After Expiration Date. This provision is common in California NPDES permits and is authorized under 40 CFR 122.6(d).

7. Compliance Schedules

This Order establishes interim effluent limitations and compliance schedules that provide the Discharger time to bring the Facility into compliance with some new final effluent limitations for CTR pollutants.

In accordance with Section 2.1 of the SIP, interim limitations and compliance schedules for CTR pollutants may only be provided by the Water Board after the Discharger demonstrates and justifies that it is infeasible for the Discharger to achieve immediate compliance with newly established final effluent limitations. Infeasible means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Based on data submitted by the Discharger, the Water Board has determined that it is infeasible for the Discharger to achieve immediate

compliance with some of the newly established effluent limitations for CTR pollutants.

The provision for compliance schedules is based on Section 2.1 (Compliance Schedules) of the SIP. This Order allows the Discharger until **May 18, 2010**, to comply with the final effluent limitations for zinc, cyanide, chlorodibromomethane (dibromochloromethane), dichlorobromomethane (bromodichloromethane), bis(2-ethylhexyl)phthalate, and dibenzo(a,h)anthracene. The Discharger is required to develop and begin implementing a Compliance Plan by **six months following the effective date of this Order**. In addition, in accordance with 40 CFR 122.47, annual reporting is required to inform the Water Board about the progress made by the Discharger to achieve compliance with the final limitations within the specified time. During the interim period, the Discharger is required to meet the interim limitations derived from Facility performance data.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Lahontan Region (Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for **Victor Valley Waste Reclamation Authority**. As a step in the WDR adoption process, the Water Board staff has developed tentative WDRs which were circulated for public comment under cover letters dated August 30, 2005, April 24, 2006 and January 10, 2008. The Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following: Victorville Daily Press and Barstow Desert Dispatch on January 8, 2008.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Officer at the Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Water Board, written comments should be received at the Water Board offices by 5:00 p.m. on **February 8, 2008**.

C. Public Hearing

The Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **February 14, 2008**
Time: **8:30 am**
Location: **Mojave Desert Air Quality Management District**
14306 Park Ave
Victorville, CA 92392

Interested persons are invited to attend. At the public hearing, the Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing. Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Water Board by calling (760) 241-6583.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jehiel Cass at (760) 241-6583.

ATTACHMENT G – BASIN PLAN WATER AMMONIA WATER QUALITY OBJECTIVE TABLE

Table 3-1
ONE-HOUR AVERAGE CONCENTRATION FOR AMMONIA^{1,2}

Waters Designated as COLD, COLD with SPWN, COLD with MIGR (Salmonids or other sensitive coldwater species present)

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0091	0.0129	0.0182	0.026	0.038	0.056	0.083
6.75	0.0149	0.021	0.030	0.042	0.059	0.083	0.12
7.00	0.023	0.033	0.046	0.066	0.093	0.13	0.19
7.25	0.034	0.048	0.066	0.095	0.135	0.19	0.28
7.50	0.045	0.064	0.091	0.128	0.181	0.26	0.38
7.75	0.058	0.080	0.112	0.159	0.22	0.32	0.47
8.00	0.065	0.092	0.130	0.184	0.26	0.38	0.55
8.25	0.065	0.092	0.130	0.184	0.26	0.38	0.55
8.50	0.065	0.092	0.130	0.184	0.26	0.38	0.55
8.75	0.065	0.092	0.130	0.184	0.26	0.38	0.55
9.00	0.065	0.092	0.130	0.184	0.26	0.38	0.55
Total Ammonia (mg/liter NH ₃)							
6.50	35	33	31	30	29	20	14.3
6.75	32	30	28	27	27	19.6	13.2
7.00	28	26	25	24	23	18.4	11.6
7.25	23	22	20	19.7	19.2	13.4	9.5
7.50	17.4	16.3	15.5	14.9	14.6	10.2	7.3
7.75	12.2	11.4	10.9	10.5	10.3	7.2	5.2
8.00	8.0	7.5	7.1	6.9	6.6	4.9	3.5
8.25	4.5	4.2	4.1	4.0	3.9	2.9	2.1
8.50	2.8	2.4	2.3	2.3	2.3	1.71	1.29
8.75	1.47	1.40	1.37	1.38	1.42	1.07	0.83
9.00	0.98	0.93	0.92	0.96	0.91	0.72	0.58

1 To convert these values to mg/liter N, multiply by 0.822

2 Source: U. S. Environmental Protection Agency, 1986. Quality criteria for water, 1986. EPA 440/5-86-001.

Table 3-2
ONE-HOUR AVERAGE CONCENTRATION FOR AMMONIA^{1,2}

Waters designated WARM, WARM with SPWN, WARM with MIGR (Salmonids or other sensitive coldwater species absent);³

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0091	0.0129	0.0182	0.026	0.038	0.051	0.061
6.75	0.0149	0.021	0.030	0.042	0.059	0.084	0.094
7.00	0.023	0.033	0.046	0.066	0.093	0.131	0.092
7.25	0.034	0.048	0.068	0.095	0.135	0.190	0.190
7.50	0.045	0.064	0.091	0.128	0.181	0.26	0.26
7.75	0.058	0.080	0.112	0.160	0.22	0.32	0.32
8.00	0.085	0.092	0.130	0.184	0.26	0.37	0.37
8.25	0.085	0.092	0.120	0.184	0.28	0.37	0.37
8.50	0.085	0.092	0.120	0.184	0.28	0.37	0.37
8.75	0.085	0.092	0.120	0.184	0.28	0.37	0.37
9.00	0.085	0.092	0.120	0.184	0.28	0.37	0.37
Total Ammonia (mg/liter NH ₃)							
6.50	35	33	31	20	29	29	20
6.75	32	30	28	27	27	28	18.6
7.00	28	28	25	24	23	23	16.4
7.25	23	22	20	19.7	19.2	19.0	13.5
7.50	17.4	18.3	16.5	14.9	14.6	14.5	10.2
7.75	12.2	11.4	10.9	10.5	10.3	10.2	7.3
8.00	9.0	7.5	7.1	6.9	6.8	6.8	4.9
8.25	4.5	4.2	4.1	4.0	3.9	4.0	2.9
8.50	2.8	2.4	2.3	2.3	2.3	2.4	1.81
8.75	1.47	1.40	1.37	1.38	1.42	1.52	1.18
9.00	0.88	0.83	0.83	0.86	0.91	1.01	0.82

1 To convert these values to mg/liter, multiply by 0.822

2 Source: U. S. Environmental Protection Agency, 1986. Quality criteria for water, 1986. EPA 440/5-86-001.

3 These values may be conservative, however, if a more refined criterion is desired, USEPA recommends a site-specific criteria modification.

09-0152-6

Table 3-3
FOUR DAY AVERAGE CONCENTRATION FOR AMMONIA^{1,2}

Waters Designated as COLD, COLD with SPWN, COLD with MIGR (Salmonids or other sensitive coldwater species present)

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0008	0.0011	0.0016	0.0022	0.0022	0.0022	0.0022
6.75	0.0014	0.0020	0.0028	0.0039	0.0039	0.0039	0.0039
7.00	0.0026	0.0035	0.0049	0.0070	0.0070	0.0070	0.0070
7.25	0.0044	0.0062	0.0088	0.0124	0.0124	0.0124	0.0124
7.50	0.0078	0.0111	0.0156	0.022	0.022	0.022	0.022
7.75	0.0129	0.0182	0.026	0.036	0.036	0.036	0.036
8.00	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.25	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.50	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.75	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
9.00	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
Total Ammonia (mg/liter NH ₃)							
6.50	3.0	2.8	2.7	2.6	1.78	1.23	0.87
6.75	3.0	2.8	2.7	2.6	1.78	1.23	0.87
7.00	3.0	2.9	2.7	2.6	1.78	1.23	0.87
7.25	3.0	2.9	2.7	2.6	1.77	1.24	0.88
7.50	3.0	2.9	2.7	2.6	1.79	1.25	0.89
7.75	2.8	2.6	2.5	2.4	1.68	1.17	0.84
8.00	1.82	1.70	1.62	1.57	1.10	0.78	0.56
8.25	1.03	0.97	0.93	0.90	0.64	0.46	0.33
8.50	0.58	0.55	0.53	0.52	0.38	0.28	0.21
8.75	0.34	0.32	0.31	0.31	0.23	0.173	0.126
9.00	0.105	0.189	0.189	0.195	0.148	0.118	0.094

1 To convert these values to mg/liter N, multiply by 0.822.

2 Source: U. S. Environmental Protection Agency. 1992. Revised tables for determining average freshwater ammonia concentrations. USEPA Office of Water Memorandum, July 30, 1992.

09-0152 - c

Table 3-4
FOUR DAY AVERAGE CONCENTRATION FOR AMMONIA^{1,2}

Waters designated WARM, WARM with SPWN, WARM with MIGR (Salmonids or other sensitive coldwater species absent)³

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0002	0.0011	0.0016	0.0022	0.0031	0.0031	0.0031
6.75	0.0014	0.0020	0.0028	0.0039	0.0055	0.0055	0.0055
7.00	0.0025	0.0035	0.0049	0.0070	0.0099	0.0099	0.0099
7.25	0.0044	0.0062	0.0088	0.0124	0.0175	0.0175	0.0175
7.50	0.0078	0.0111	0.0156	0.022	0.031	0.031	0.031
7.75	0.0129	0.0182	0.026	0.036	0.051	0.051	0.051
8.00	0.0149	0.021	0.030	0.042	0.059	0.059	0.059
8.25	0.0149	0.021	0.030	0.042	0.059	0.059	0.059
8.50	0.0149	0.021	0.030	0.042	0.059	0.059	0.059
8.75	0.0149	0.021	0.030	0.042	0.059	0.059	0.059
9.00	0.0149	0.021	0.030	0.042	0.059	0.059	0.059
Total Ammonia (mg/liter NH ₃)							
6.50	3.0	2.8	2.7	2.6	2.5	1.73	1.23
6.75	3.0	2.8	2.7	2.6	2.5	1.74	1.23
7.00	3.0	2.8	2.7	2.6	2.5	1.74	1.23
7.25	3.0	2.8	2.7	2.6	2.5	1.75	1.24
7.50	3.0	2.8	2.7	2.6	2.5	1.78	1.25
7.75	2.8	2.6	2.5	2.4	2.3	1.65	1.18
8.00	1.92	1.70	1.62	1.57	1.55	1.10	0.79
8.25	1.03	0.97	0.92	0.90	0.90	0.64	0.47
8.50	0.58	0.55	0.52	0.52	0.53	0.39	0.29
8.75	0.34	0.32	0.31	0.31	0.32	0.24	0.190
9.00	0.195	0.189	0.189	0.195	0.21	0.162	0.123

1 To convert these values to mg/liter N, multiply by 0.622.

2 Source: U. S. Environmental Protection Agency, 1992. Revised tables for determining average freshwater ammonia concentrations. USEPA Office of Water Memorandum, July 30, 1992.

3 These values may be conservative, however, if a more refined criterion is desired, USEPA recommends a site-specific criteria modification.

09-0152 -d

ATTACHMENT H – BASIN PLAN DISSOLVED OXYGEN WATER QUALITY OBJECTIVE TABLE

**Table 3-6
WATER QUALITY CRITERIA FOR
AMBIENT DISSOLVED OXYGEN CONCENTRATION^{1,2}**

	Beneficial Use Class			
	COLD & SPWN ³	COLD	WARM & SPWN ³	WARM
30 Day Mean	NA ⁴	6.5	NA	5.5
7 Day Mean	9.5 (6.5)	NA	6.0	NA
7 Day Mean Minimum	NA	5.0	NA	4.0
1 Day Minimum ^{5,6}	8.0 (5.0)	4.0	5.0	3.0

¹ From: USEPA. 1986. Ambient water quality criteria for dissolved oxygen. Values are in mg/L.

² These are water column concentrations recommended to achieve the required intergravel dissolved oxygen concentrations shown in parentheses. For species that have early life stages exposed directly to the water column (SPWN), the figures in parentheses apply.

³ Includes all embryonic and larval stages and all juvenile forms to 30-days following hatching (SPWN).

⁴ NA (Not Applicable).

⁵ For highly manipulatable discharges, further restrictions apply.

⁶ All minima should be considered as instantaneous concentrations to be achieved at all times.

09-0152 – e

Attachment I – Summary Water Quality-Based Effluent Limit Calculations for Priority Pollutants

The water quality-based effluent limits for California Toxics Rule (CTR) priority pollutants developed for this Order are summarized below and were calculated as described in the methodology summarized in Attachment F, Fact Sheet Section IV.D.1 of this Order.

	Human Health Calculations			Aquatic Life Calculations											Selected Limits	
	Human Health			Saltwater / Freshwater												
	AMEL = ECA = C hh	MDEL/AMEL multiplier	MDEL hh	ECA acute = C acute	ECA acute multiplier	LTA acute	ECA chronic = C chronic	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier 95	AMEL aquatic life	MDEL multiplier 99 aquatic life	AMEL	MDEL	
Priority Pollutant	ug/L		ug/L	ug/L		ug/L	ug/L		ug/L	ug/L				ug/L	ug/L	
	1300	1.55	2,026	23.08	0.495	11.43	14.68	0.690	10.12	10.12	1.295	13.11	20.44	13	20	
	n/a	2.43	—	187.83	0.220	41.34	187.83	0.398	74.70	41.34	1.867	77.16	187.83	77	190	
Copper	700	2.64	1,850	22	0.182	4.014	5.20	0.337	1.751	1.751	2.077	3.630	9.598	3.6	9.6	
Cyanide																
Chlorodibromomethane (Dibromochloromethane)	0.41	3.176	1.302	—	—	—	—	—	—	—	—	—	—	0.41	1.3	
Dichlorobromomethane (Bromodichloromethane)	0.56	2.587	1.448	—	—	—	—	—	—	—	—	—	—	0.56	1.4	
Bis(2-Ethylhexyl)Phthalate	1.8	2.006	3.611	—	—	—	—	—	—	—	—	—	—	1.8	3.6	
Dibenzo (a,h) Anthracene	0.0044	2.006	0.0088	—	—	—	—	—	—	—	—	—	—	0.0044	0.0088	

Notes:

- "–" = No Value
- C = Water Quality Criteria
- hh = Human health
- AMEL = Average monthly effluent limitation
- MDEL = Maximum daily effluent limitation
- ECA = Effluent concentration allowance
- LTA = Long-term average concentration

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

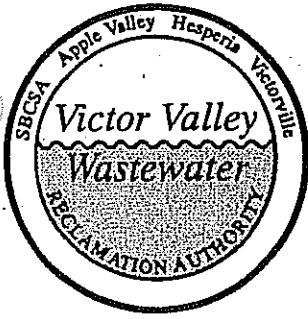
- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

ENCLOSURE 2

09-0153



Victor Valley Wastewater Reclamation Authority

A Joint Powers Authority and Public Agency of the State of California

20111 Shay Road • Victorville, California 92394

Telephone: (760) 246-8638 • Fax: (760) 246-5440

e-mail: mail@vwwra.com

23 January 2008

Lahontan Region Water Quality Control Board
Mr. Jehiel Cass
Victorville Branch Office
14440 Civic Drive, Suite 200
Victorville, CA 92392-2306

1/200

CRWQCB REG 6	
Rec'd	JAN 23 2008
JC	Hand Del
File	

Re: VVWRA WDID No. 6B3600109001
Comments on Tentative NPDES Permit

Dear Mr. Cass,

Victor Valley Wastewater Reclamation Authority (VVWRA) wishes to extend its deepest thanks to the staff of the Lahontan Region Water Quality Control Board (LRWQCB) for their efforts on the tentative NPDES permit. There are four attachments to this letter for your consideration. The first addresses VVWRA's specific comments to the tentative permit. Secondly, a memo and data from Gina Cloutier Laboratory Supervisor for VVWRA addressing total and fecal coliform testing. Finally figures showing the process schematics and locations of improvements for the Phase 3 A and B expansions.

Thank you for your time and consideration of these documents, if you have additional questions please contact me at your earliest convenience.

Sincerely,

Logan Olds
General Manager

09-0154

ATTACHMENT ONE

09-0155

VVWRA

Tentative NPDES Permit Review

21 January 2008

1. Page 8 third paragraph, Does not list the County of San Bernardino Service areas 42 and 64 as a VVWRA member entity.
2. Page 9 first paragraph, replace "...convert existing SECONDARY CLARIFIERS..." with ".....convert existing AIR BAYS..."
3. Page 9 first paragraph, delete last sentence "The carbon source.....primary clarifier". The latest modeling indicates that there is sufficient soluble BOD to eliminate the fermenter.
4. Page 15-16 Table 6, Page 15 Table 6, The cyanide and zinc limits in Table 6 are different than the limits proposed in the Template version of the permit developed by Tetra Tech, which we reviewed in November. These limits appear to have been taken from the earlier, April 2006 Tentative Order rather than the updated version developed by Tetra Tech. The Fact Sheet does not directly address how the cyanide and zinc limits were calculated and therefore does not explain why the limits were changed. We request the Regional Board check the calculations to make sure there was no error and, if not, explain why the limits were changed.
5. Page 17, Item b. VVWRA is requesting a 14 mgd ANNUAL AVERAGE not a monthly average.
6. Page 17 item d, Fecal Coliform, please see attached document from VVWRA Laboratory Supervisor Gina Cloutier. Also Fecal coliform is a subset of total coliform and the limitation for total coliform is $1/10^{th}$ of the proposed fecal coliform limit. Moreover, the VVWRA lab is currently not ELAP-approved for the fecal coliform test.
7. Page 19, number 3, see #6 above
8. Page 31, Item d, and other references to three additional receiving water monitoring stations must be changed. During previous discussions it was recognized that providing additional receiving water monitoring sites was duplicative of the SEP analysis and that these would be removed. Not removing them implies that the SEP is permanent. Therefore, approximately one third of the costs associated with the SEP will be ineligible because VVWRA will now be performing them as part of the permit.

VVWRA requests that this section (and Attachment B-5 and RMP Monitoring Locations in Tables 1 and 4) be modified consistent with the following:

09-0156

d. **Receiving Water Monitoring.** By [~~three~~ twelve months following the effective date in this Order] the Discharger shall propose for the Executive Officer's concurrence, ~~additional a new~~ receiving water monitoring locations RSW-003, RSW-004, and RSW-005 generally as shown on Attachment B-5, to replace existing receiving water monitoring station RSW-002.

By [~~six months following the Executive Officer's concurrence~~ the effective date in this Order] the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at the above locations.

The rationale for proposing twelve months is that this would allow completion of the SEP monitoring, which will provide valuable information for locating a new receiving water monitoring station. The delay would not cause a delay in gathering receiving water information because the SEP is already gathering much of this information. In that respect, it would eliminate any duplication of monitoring under the permit and the SEP and preserve the eligibility of the SEP monitoring costs.

The rationale for replacing the existing receiving water monitoring station with a new one closer to the discharge is that it would result in receiving water monitoring consistent with most other dischargers in the state, i.e., one upstream station and one downstream station, and reduce VVWRA's receiving water monitoring costs. There does not appear to be any good reason to have four downstream receiving water monitoring stations, especially considering the high quality effluent that will be produced upon completion of Phase III and the lack of any dilution credit.

The rationale for providing six months after Executive Officer concurrence on the site selection to construct the appurtenances necessary is that it will take this amount of time to design, arrange for funding and construct the necessary access structures. We will not be able to begin this process until the Executive Officer has concurred with the site location. (Assumes no significant environmental permitting issues for the access)

9. ~~B.~~ Page 47, Obtain treatment line diagrams for Phase 3 A and B

10. ~~B.~~ Page 58, IX B. see #6 above

11. ~~10.~~ Page 60 Table 1, remove all but one downstream receiving water monitoring station.

Alternatively note that RSW-002 will be utilized until RSW-003 location is approved and it is accessible.

12. ~~11.~~ Page 62, Table 3, remove fecal coliform requirement, Change Minimum Sampling Frequency for Ammonia Nitrogen, Nitrate Nitrogen, Total Kjeldahl Nitrogen, and MBAS to 1/month, to make the frequency consistent with other parameters and with the frequencies that were in the template version of the permit. (MBAS was 1/week in the

template, but that does not seem reasonable given the 1/month frequency for other pollutants.)

- 13 12. Page 63, Table 3, remove 180 day fecal coliform requirement
- 14 13. Page 67 Table 4, see Item 11 above. Change the monitoring frequency for Hardness to 1/quarter. This is consistent with other parameters. There does not appear to be any reason to require monthly sampling for hardness, and a requirement for monthly receiving water sampling of any kind would significantly increase VVWRA's receiving water monitoring costs.
- 15 14. Page 69, modify reference to RSW-003 for chronic aquatic toxicity testing consistent with Item 11 above.
- 16 15. Page 83 first paragraph, "....discharge to 14 mgd when the Phase III A is complete."
- 17 16. Page 87 fourth paragraph, "The discharger will convert existing secondary clarifiers to pre-anoxic reactor tanks and post-anoxic reactor tanks." Information developed and modeled by HDR indicate that it will be less expensive to modify the existing air bays and build a tank attached to the MBR system than it will be to modify the secondary clarifiers and install all the piping. The sentence should read, "The discharger will convert existing air bays and construct additional tankage for pre and post anoxic reactor tanks".
- 18 17. Page 107 Table 10, remove fecal coliform, see #6 above
- 19 18. Page 115, Ammonia Nitrogen, how can you use warm and cold??? There isn't any data to substantiate the cold claim.
- 20 19. Page 118 third paragraph, "In treated wastewater with biological nutrient removal, total nitrogen consists of essentially ammonia-nitrogen and nitrate-nitrogen" I COMPLETELY disagree, based upon the analysis performed by HDR dissolved nitrogen (of which no treatment exists to remove) comprises over 20% of total nitrogen. Furthermore ammonia is anticipated to be 0.1 mg/L while dissolved nitrogen will be 1.5 mg/L (page 6 Figure 5 of the HDR memo)
- 21 20. Page 128, remove Fecal Coliform, see #6 above.
- 22 21. Page 137 first paragraph and Page 138, remove additional receiving water monitoring stations pursuant to Item 8 above.
- 23 22. Page 141 Toxicity Evaluations, hasn't VVWRA done this already??
- 24 23. Page 142 is MISSING

ATTACHMENT TWO

09-0159



Fecal Coliform Analysis Requirements Discussion of Proposed NPDES Permit

Laboratory Services

DATE: January 22, 2008

TO: Logan Olds, General Plant Manager

FROM: Gina Cloutier, Laboratory Supervisor

RE: Proposed NPDES permit analysis and discharge requirements for total/fecal coliform

Upon review of the proposed NPDES waste discharge permit, I have questions/concerns regarding the requirement for Fecal Coliform monitoring and limitations vs. Total Coliform monitoring and limitations. We currently monitor Total Coliforms daily on our Final Effluent (discharge to Mojave River) and quarterly for the Receiving Waters (Upstream and Downstream Mojave River). This does not change with the proposed permit. The permit proposes to add Fecal Coliform as a monitoring requirement for both daily Final Effluent and quarterly Receiving Waters monitoring. Under the terms proposed by the new permit, Final Effluent samples would be monitored for 180 days for both total and fecal coliform. If, during that time, the analytical measurements of each constituent meet the limitations for fecal coliforms (i.e.: 30 day rolling log mean less than 20 MPN/100 mL and less than 10 % off all samples collected during the 30 day period result in 40 MPN/100 mL), Fecal Coliform analysis will be reduced to once per year. Because the Fecal Coliform analysis measures a subgroup of organisms (those that are thermotolerant) within the Total Coliform analysis measurement, the Fecal Coliform concentrations can be expected to result in values less than or equal to that of the Total Coliform concentrations. We can evaluate our current Total Coliform data for the past 180 days and show that we have consistently met the requirements as they pertain to the Fecal Coliform limitations listed above (see attached spreadsheet calculation of 30 day rolling log mean of Total Coliform over the past year). Our highest measured Total Coliform result during the past year was 4 MPN/100 mL, resulting in a highest 30 day rolling log mean of 2.83 MPN/100 mL). For this reason, I believe the 180 day monitoring of VVWRA Final Effluent for Fecal Coliform is unnecessary and we would begin the requirements for annual monitoring of Fecal Coliform on Final Effluent discharge to Mojave River (in addition to daily Total Coliform monitoring) and quarterly monitoring of Total and Fecal Coliform on Receiving Waters.

VVWRA is not currently certified for Fecal Coliform monitoring. We have begun the process of seeking to add to our current DHS-ELAP certification for Fecal Coliform analysis/enumeration. This is a lengthy process (involving WP/DMRQA study participation and success) and we will likely not be certified to perform Fecal Coliform analysis until October - November, 2008. For the time period between the effective date of the proposed NPDES permit and certification, it would be necessary for us to send any samples requiring Fecal Coliform analysis to a certified laboratory for analysis, unless we were granted a waiver from the Water Quality Control Board to perform the analysis in our own laboratory

09-0160

(although not certified) while awaiting our certification to be granted. The cost of subcontracting this analysis to a certified laboratory is \$75.00 per day per sample for a total of approximately \$13,950 (assuming 180 days of Final Effluent fecal coliform analysis).

As always, please feel free to discuss with me any concerns, questions, or recommendations that you have regarding this.

09-0161

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
1/1/2007	<2.0	2	2
1/2/2007	4	4	2.828427125
1/3/2007	<2.0	2	2.5198421
1/4/2007	<2.0	2	2.37841423
1/5/2007	<2.0	2	2.29739671
1/6/2007	<2.0	2	2.244924097
1/7/2007	<2.0	2	2.208179027
1/8/2007	<2.0	2	2.181015465
1/9/2007	<2.0	2	2.160119478
1/10/2007	<2.0	2	2.143546925
1/11/2007	<2.0	2	2.130082179
1/12/2007	<2.0	2	2.118926189
1/13/2007	<2.0	2	2.109532153
1/14/2007	<2.0	2	2.101513277
1/15/2007	<2.0	2	2.094588246
1/16/2007	<2.0	2	2.088547565
1/17/2007	<2.0	2	2.083232021
1/18/2007	<2.0	2	2.078518452
1/19/2007	<2.0	2	2.064016559
1/20/2007	<2.0	2	2.070529848
1/21/2007	<2.0	2	2.067115566
1/22/2007	<2.0	2	2.064016559
1/23/2007	<2.0	2	2.06119109
1/24/2007	<2.0	2	2.058604473
1/25/2007	<2.0	2	2.056227653
1/26/2007	<2.0	2	2.054036101
1/27/2007	<2.0	2	2.052008969
1/28/2007	<2.0	2	2.050128424
1/29/2007	<2.0	2	2.04837912
1/30/2007	<2.0	2	2.046747784
1/31/2007	<2.0	2	2.045222871
2/1/2007	<2.0	2	2.043794297
2/2/2007	<2.0	2	2.043794297
2/3/2007	4	4	2.043794297
2/4/2007	<2.0	2	2.043794297
2/5/2007	<2.0	2	2.043794297
2/6/2007	2	2	2.043794297
2/7/2007	<2.0	2	2.043794297
2/8/2007	<2.0	2	2.043794297
2/9/2007	<2.0	2	2.043794297
2/10/2007	2	2	2.043794297
2/11/2007	<2.0	2	2.043794297
2/12/2007	<2.0	2	2.043794297
2/13/2007	2	2	2.043794297
2/14/2007	<2.0	2	2.043794297
2/15/2007	<2.0	2	2.043794297
2/16/2007	<2.0	2	2.043794297
2/17/2007	<2.0	2	2.043794297

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
1/1/2007	<2.0	2	2
1/2/2007	4	4	2.828427125
1/3/2007	<2.0	2	2.5198421
1/4/2007	<2.0	2	2.37841423
1/5/2007	<2.0	2	2.29739671
1/6/2007	<2.0	2	2.244924097
1/7/2007	<2.0	2	2.208179027
1/8/2007	<2.0	2	2.181015465
1/9/2007	<2.0	2	2.160119478
1/10/2007	<2.0	2	2.143546925
1/11/2007	<2.0	2	2.130082179
1/12/2007	<2.0	2	2.118926189
1/13/2007	<2.0	2	2.109532153
1/14/2007	<2.0	2	2.101513277
1/15/2007	<2.0	2	2.094588246
1/16/2007	<2.0	2	2.088547565
1/17/2007	<2.0	2	2.083232021
1/18/2007	<2.0	2	2.078518452
1/19/2007	<2.0	2	2.064016559
1/20/2007	<2.0	2	2.070529848
1/21/2007	<2.0	2	2.067115566
1/22/2007	<2.0	2	2.064016559
1/23/2007	<2.0	2	2.06119109
1/24/2007	<2.0	2	2.058604473
1/25/2007	<2.0	2	2.056227653
1/26/2007	<2.0	2	2.054036101
1/27/2007	<2.0	2	2.052008969
1/28/2007	<2.0	2	2.050128424
1/29/2007	<2.0	2	2.04837912
1/30/2007	<2.0	2	2.046747784
1/31/2007	<2.0	2	2.045222871
2/1/2007	<2.0	2	2.043794297
2/2/2007	<2.0	2	2.043794297
2/3/2007	4	4	2.043794297
2/4/2007	<2.0	2	2.043794297
2/5/2007	<2.0	2	2.043794297
2/6/2007	2	2	2.043794297
2/7/2007	<2.0	2	2.043794297
2/8/2007	<2.0	2	2.043794297
2/9/2007	<2.0	2	2.043794297
2/10/2007	2	2	2.043794297
2/11/2007	<2.0	2	2.043794297
2/12/2007	<2.0	2	2.043794297
2/13/2007	2	2	2.043794297
2/14/2007	<2.0	2	2.043794297
2/15/2007	<2.0	2	2.043794297
2/16/2007	<2.0	2	2.043794297
2/17/2007	<2.0	2	2.043794297

09-0163

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
2/18/2007	<2.0	2	2.043794297
2/19/2007	<2.0	2	2.043794297
2/20/2007	<2.0	2	2.043794297
2/21/2007	<2.0	2	2.043794297
2/22/2007	<2.0	2	2.043794297
2/23/2007	<2.0	2	2.043794297
2/24/2007	<2.0	2	2.043794297
2/25/2007	<2.0	2	2.043794297
2/26/2007	<2.0	2	2.043794297
2/27/2007	<2.0	2	2.043794297
2/28/2007	<2.0	2	2.043794297
3/1/2007	<2.0	2	2.043794297
3/2/2007	<2.0	2	2.043794297
3/3/2007	<2.0	2	2.043794297
3/4/2007	2	2	2.043794297
3/5/2007	<2.0	2	2.043794297
3/6/2007	<2.0	2	2.043794297
3/7/2007	2	2	2
3/8/2007	<2.0	2	2
3/9/2007	<2.0	2	2
3/10/2007	<2.0	2	2
3/11/2007	4	4	2.043794297
3/12/2007	<2.0	2	2.043794297
3/13/2007	<2.0	2	2.043794297
3/14/2007	<2.0	2	2.043794297
3/15/2007	<2.0	2	2.043794297
3/16/2007	<2.0	2	2.043794297
3/17/2007	<2.0	2	2.043794297
3/18/2007	<2.0	2	2.043794297
3/19/2007	<2.0	4	2.088547565
3/20/2007	<2.0	2	2.088547565
3/21/2007	<2.0	2	2.088547565
3/22/2007	<2.0	2	2.088547565
3/23/2007	<2.0	2	2.088547565
3/24/2007	<2.0	2	2.088547565
3/25/2007	<2.0	2	2.088547565
3/26/2007	<2.0	2	2.088547565
3/27/2007	<2.0	2	2.088547565
3/28/2007	<2.0	2	2.088547565
3/29/2007	<2.0	2	2.088547565
3/30/2007	2	2	2.088547565
3/31/2007	<2.0	2	2.088547565
4/1/2007	<2.0	2	2.088547565
4/2/2007	2	2	2.088547565
4/3/2007	<2.0	2	2.088547565
4/4/2007	<2.0	2	2.088547565
4/5/2007	<2.0	2	2.088547565
4/6/2007	2	2	2.088547565

09-0164

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
2/18/2007	<2.0	2	2.043794297
2/19/2007	<2.0	2	2.043794297
2/20/2007	<2.0	2	2.043794297
2/21/2007	<2.0	2	2.043794297
2/22/2007	<2.0	2	2.043794297
2/23/2007	<2.0	2	2.043794297
2/24/2007	<2.0	2	2.043794297
2/25/2007	<2.0	2	2.043794297
2/26/2007	<2.0	2	2.043794297
2/27/2007	<2.0	2	2.043794297
2/28/2007	<2.0	2	2.043794297
3/1/2007	<2.0	2	2.043794297
3/2/2007	<2.0	2	2.043794297
3/3/2007	<2.0	2	2.043794297
3/4/2007	2	2	2.043794297
3/5/2007	<2.0	2	2.043794297
3/6/2007	<2.0	2	2.043794297
3/7/2007	2	2	2
3/8/2007	<2.0	2	2
3/9/2007	<2.0	2	2
3/10/2007	<2.0	2	2
3/11/2007	4	4	2.043794297
3/12/2007	<2.0	2	2.043794297
3/13/2007	<2.0	2	2.043794297
3/14/2007	<2.0	2	2.043794297
3/15/2007	<2.0	2	2.043794297
3/16/2007	<2.0	2	2.043794297
3/17/2007	<2.0	2	2.043794297
3/18/2007	<2.0	2	2.043794297
3/19/2007	<2.0	4	2.088547565
3/20/2007	<2.0	2	2.088547565
3/21/2007	<2.0	2	2.088547565
3/22/2007	<2.0	2	2.088547565
3/23/2007	<2.0	2	2.088547565
3/24/2007	<2.0	2	2.088547565
3/25/2007	<2.0	2	2.088547565
3/26/2007	<2.0	2	2.088547565
3/27/2007	<2.0	2	2.088547565
3/28/2007	<2.0	2	2.088547565
3/29/2007	<2.0	2	2.088547565
3/30/2007	2	2	2.088547565
3/31/2007	<2.0	2	2.088547565
4/1/2007	<2.0	2	2.088547565
4/2/2007	2	2	2.088547565
4/3/2007	<2.0	2	2.088547565
4/4/2007	<2.0	2	2.088547565
4/5/2007	<2.0	2	2.088547565
4/6/2007	2	2	2.088547565

09-0165

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
4/7/2007	<2.0	2	2.088547565
4/8/2007	<2.0	2	2.088547565
4/9/2007	<2.0	2	2.088547565
4/10/2007	<2.0	2	2.088547565
4/11/2007	<2.0	2	2.088547565
4/12/2007	2	2	2.043794297
4/13/2007	<2.0	2	2.043794297
4/14/2007	<2.0	2	2.043794297
4/15/2007	2	2	2.043794297
4/16/2007	<2.0	2	2.043794297
4/17/2007	<2.0	2	2.043794297
4/18/2007	<2.0	2	2.043794297
4/19/2007	<2.0	2	2.043794297
4/20/2007	<2.0	2	2
4/21/2007	<2.0	2	2
4/22/2007	<2.0	2	2
4/23/2007	<2.0	2	2
4/24/2007	<2.0	2	2
4/25/2007	<2.0	2	2
4/26/2007	<2.0	2	2
4/27/2007	<2.0	2	2
4/28/2007	<2.0	2	2
4/29/2007	<2.0	2	2
4/30/2007	<2.0	2	2
5/1/2007	2	2	2
5/2/2007	<2.0	2	2
5/3/2007	<2.0	2	2
5/4/2007	<2.0	2	2
5/5/2007	<2.0	2	2
5/6/2007	<2.0	2	2
5/7/2007	<2.0	2	2
5/8/2007	<2.0	2	2
5/9/2007	<2.0	2	2
5/10/2007	<2.0	2	2
5/11/2007	<2.0	2	2
5/12/2007	<2.0	2	2
5/13/2007	<2.0	2	2
5/14/2007	<2.0	2	2
5/15/2007	<2.0	2	2
5/16/2007	<2.0	2	2
5/17/2007	<2.0	2	2
5/18/2007	2	2	2
5/19/2007	<2.0	2	2
5/20/2007	2	2	2
5/21/2007	2	2	2
5/22/2007	<2.0	2	2
5/23/2007	<2.0	2	2
5/24/2007	<2.0	2	2

09-0166

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
4/7/2007	<2.0	2	2.088547565
4/8/2007	<2.0	2	2.088547565
4/9/2007	<2.0	2	2.088547565
4/10/2007	<2.0	2	2.088547565
4/11/2007	<2.0	2	2.088547565
4/12/2007	2	2	2.043794297
4/13/2007	<2.0	2	2.043794297
4/14/2007	<2.0	2	2.043794297
4/15/2007	2	2	2.043794297
4/16/2007	<2.0	2	2.043794297
4/17/2007	<2.0	2	2.043794297
4/18/2007	<2.0	2	2.043794297
4/19/2007	<2.0	2	2.043794297
4/20/2007	<2.0	2	2
4/21/2007	<2.0	2	2
4/22/2007	<2.0	2	2
4/23/2007	<2.0	2	2
4/24/2007	<2.0	2	2
4/25/2007	<2.0	2	2
4/26/2007	<2.0	2	2
4/27/2007	<2.0	2	2
4/28/2007	<2.0	2	2
4/29/2007	<2.0	2	2
4/30/2007	<2.0	2	2
5/1/2007	2	2	2
5/2/2007	<2.0	2	2
5/3/2007	<2.0	2	2
5/4/2007	<2.0	2	2
5/5/2007	<2.0	2	2
5/6/2007	<2.0	2	2
5/7/2007	<2.0	2	2
5/8/2007	<2.0	2	2
5/9/2007	<2.0	2	2
5/10/2007	<2.0	2	2
5/11/2007	<2.0	2	2
5/12/2007	<2.0	2	2
5/13/2007	<2.0	2	2
5/14/2007	<2.0	2	2
5/15/2007	<2.0	2	2
5/16/2007	<2.0	2	2
5/17/2007	<2.0	2	2
5/18/2007	2	2	2
5/19/2007	<2.0	2	2
5/20/2007	2	2	2
5/21/2007	2	2	2
5/22/2007	<2.0	2	2
5/23/2007	<2.0	2	2
5/24/2007	<2.0	2	2

09-0167

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
5/25/2007	<2.0	2	2
5/26/2007	<2.0	2	2
5/27/2007	4	4	2.043794297
5/28/2007	<2.0	2	2.043794297
5/29/2007	<2.0	2	2.043794297
5/30/2007	<2.0	2	2.043794297
5/31/2007	<2.0	2	2.043794297
6/1/2007	<2.0	2	2.043794297
6/2/2007	<2.0	2	2.043794297
6/3/2007	<2.0	2	2.043794297
6/4/2007	<2.0	2	2.043794297
6/5/2007	<2.0	2	2.043794297
6/6/2007	<2.0	2	2.043794297
6/7/2007	<2.0	2	2.043794297
6/8/2007	<2.0	2	2.043794297
6/9/2007	<2.0	2	2.043794297
6/10/2007	<2.0	2	2.043794297
6/11/2007	<2.0	2	2.043794297
6/12/2007	4	4	2.088547565
6/13/2007	<2.0	2	2.088547565
6/14/2007	<2.0	2	2.088547565
6/15/2007	<2.0	2	2.088547565
6/16/2007	<2.0	2	2.088547565
6/17/2007	<2.0	2	2.088547565
6/18/2007	2	2	2.088547565
6/19/2007	4	4	2.134280801
6/20/2007	<2.0	2	2.134280801
6/21/2007	<2.0	2	2.134280801
6/22/2007	<2.0	2	2.134280801
6/23/2007	<2.0	2	2.134280801
6/24/2007	<2.0	2	2.134280801
6/25/2007	<2.0	2	2.134280801
6/26/2007	<2.0	2	2.134280801
6/27/2007	<2.0	2	2.134280801
6/28/2007	<2.0	2	2.088547565
6/29/2007	<2.0	2	2.088547565
6/30/2007	<2.0	2	2.088547565
7/1/2007	<2.0	2	2.088547565
7/2/2007	<2.0	2	2.088547565
7/3/2007	<2.0	2	2.088547565
7/4/2007	<2.0	2	2.088547565
7/5/2007	<2.0	2	2.088547565
7/6/2007	<2.0	2	2.088547565
7/7/2007	<2.0	2	2.088547565
7/8/2007	<2.0	2	2.088547565
7/9/2007	<2.0	2	2.088547565
7/10/2007	2	2	2.088547565
7/11/2007	<2.0	2	2.088547565

09-0168

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
5/25/2007	<2.0	2	2
5/26/2007	<2.0	2	2
5/27/2007	4	4	2.043794297
5/28/2007	<2.0	2	2.043794297
5/29/2007	<2.0	2	2.043794297
5/30/2007	<2.0	2	2.043794297
5/31/2007	<2.0	2	2.043794297
6/1/2007	<2.0	2	2.043794297
6/2/2007	<2.0	2	2.043794297
6/3/2007	<2.0	2	2.043794297
6/4/2007	<2.0	2	2.043794297
6/5/2007	<2.0	2	2.043794297
6/6/2007	<2.0	2	2.043794297
6/7/2007	<2.0	2	2.043794297
6/8/2007	<2.0	2	2.043794297
6/9/2007	<2.0	2	2.043794297
6/10/2007	<2.0	2	2.043794297
6/11/2007	<2.0	2	2.043794297
6/12/2007	4	4	2.088547565
6/13/2007	<2.0	2	2.088547565
6/14/2007	<2.0	2	2.088547565
6/15/2007	<2.0	2	2.088547565
6/16/2007	<2.0	2	2.088547565
6/17/2007	<2.0	2	2.088547565
6/18/2007	2	2	2.088547565
6/19/2007	4	4	2.134280801
6/20/2007	<2.0	2	2.134280801
6/21/2007	<2.0	2	2.134280801
6/22/2007	<2.0	2	2.134280801
6/23/2007	<2.0	2	2.134280801
6/24/2007	<2.0	2	2.134280801
6/25/2007	<2.0	2	2.134280801
6/26/2007	<2.0	2	2.134280801
6/27/2007	<2.0	2	2.134280801
6/28/2007	<2.0	2	2.088547565
6/29/2007	<2.0	2	2.088547565
6/30/2007	<2.0	2	2.088547565
7/1/2007	<2.0	2	2.088547565
7/2/2007	<2.0	2	2.088547565
7/3/2007	<2.0	2	2.088547565
7/4/2007	<2.0	2	2.088547565
7/5/2007	<2.0	2	2.088547565
7/6/2007	<2.0	2	2.088547565
7/7/2007	<2.0	2	2.088547565
7/8/2007	<2.0	2	2.088547565
7/9/2007	<2.0	2	2.088547565
7/10/2007	2	2	2.088547565
7/11/2007	<2.0	2	2.088547565

09-0169

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWWRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
7/12/2007	<2.0	2	2.088547565
7/13/2007	<2.0	2	2.088547565
7/14/2007	<2.0	2	2.043794297
7/15/2007	<2.0	2	2.043794297
7/16/2007	<2.0	2	2.043794297
7/17/2007	<2.0	2	2.043794297
7/18/2007	<2.0	2	2.043794297
7/19/2007	<2.0	2	2.043794297
7/20/2007	<2.0	2	2.043794297
7/21/2007	<2.0	2	2
7/22/2007	<2.0	2	2
7/23/2007	<2.0	2	2
7/24/2007	<2.0	2	2
7/25/2007	2	2	2
7/26/2007	2	2	2
7/27/2007	<2.0	2	2
7/28/2007	2	2	2
7/29/2007	<2.0	2	2
7/30/2007	<2.0	2	2
7/31/2007	<2.0	2	2
8/1/2007	<2.0	2	2
8/2/2007	<2.0	2	2
8/3/2007	<2.0	2	2
8/4/2007	2	2	2
8/5/2007	<2.0	2	2
8/6/2007	<2.0	2	2
8/7/2007	<2.0	2	2
8/8/2007	<2.0	2	2
8/9/2007	<2.0	2	2
8/10/2007	<2.0	2	2
8/11/2007	<2.0	2	2
8/12/2007	<2.0	2	2
8/13/2007	2	2	2
8/14/2007	<2.0	2	2
8/15/2007	<2.0	2	2
8/16/2007	<2.0	2	2
8/17/2007	<2.0	2	2
8/18/2007	<2.0	2	2
8/19/2007	<2.0	2	2
8/20/2007	<2.0	2	2
8/21/2007	<2.0	2	2
8/22/2007	<2.0	2	2
8/23/2007	<2.0	2	2
8/24/2007	<2.0	2	2
8/25/2007	<2.0	2	2
8/26/2007	<2.0	2	2
8/27/2007	<2.0	2	2
8/28/2007	<2.0	2	2

09-0170

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
7/12/2007	<2.0	2	2.088547565
7/13/2007	<2.0	2	2.088547565
7/14/2007	<2.0	2	2.043794297
7/15/2007	<2.0	2	2.043794297
7/16/2007	<2.0	2	2.043794297
7/17/2007	<2.0	2	2.043794297
7/18/2007	<2.0	2	2.043794297
7/19/2007	<2.0	2	2.043794297
7/20/2007	<2.0	2	2.043794297
7/21/2007	<2.0	2	2
7/22/2007	<2.0	2	2
7/23/2007	<2.0	2	2
7/24/2007	<2.0	2	2
7/25/2007	2	2	2
7/26/2007	2	2	2
7/27/2007	<2.0	2	2
7/28/2007	2	2	2
7/29/2007	<2.0	2	2
7/30/2007	<2.0	2	2
7/31/2007	<2.0	2	2
8/1/2007	<2.0	2	2
8/2/2007	<2.0	2	2
8/3/2007	<2.0	2	2
8/4/2007	2	2	2
8/5/2007	<2.0	2	2
8/6/2007	<2.0	2	2
8/7/2007	<2.0	2	2
8/8/2007	<2.0	2	2
8/9/2007	<2.0	2	2
8/10/2007	<2.0	2	2
8/11/2007	<2.0	2	2
8/12/2007	<2.0	2	2
8/13/2007	2	2	2
8/14/2007	<2.0	2	2
8/15/2007	<2.0	2	2
8/16/2007	<2.0	2	2
8/17/2007	<2.0	2	2
8/18/2007	<2.0	2	2
8/19/2007	<2.0	2	2
8/20/2007	<2.0	2	2
8/21/2007	<2.0	2	2
8/22/2007	<2.0	2	2
8/23/2007	<2.0	2	2
8/24/2007	<2.0	2	2
8/25/2007	<2.0	2	2
8/26/2007	<2.0	2	2
8/27/2007	<2.0	2	2
8/28/2007	<2.0	2	2

09-0171

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
8/29/2007	<2.0	2	2
8/30/2007	<2.0	2	2
8/31/2007	<2.0	2	2
9/1/2007	<2.0	2	2
9/2/2007	<2.0	2	2
9/3/2007	<2.0	2	2
9/4/2007	<2.0	2	2
9/5/2007	<2.0	2	2
9/6/2007	<2.0	2	2
9/7/2007	<2.0	2	2
9/8/2007	<2.0	2	2
9/9/2007	<2.0	2	2
9/10/2007	<2.0	2	2
9/11/2007	<2.0	2	2
9/12/2007	<2.0	2	2
9/13/2007	<2.0	2	2
9/14/2007	<2.0	2	2
9/15/2007	<2.0	2	2
9/16/2007	2	2	2
9/17/2007	<2.0	2	2
9/18/2007	<2.0	2	2
9/19/2007	<2.0	2	2
9/20/2007	<2.0	2	2
9/21/2007	<2.0	2	2
9/22/2007	<2.0	2	2
9/23/2007	<2.0	2	2
9/24/2007	<2.0	2	2
9/25/2007	<2.0	2	2
9/26/2007	<2.0	2	2
9/27/2007	<2.0	2	2
9/28/2007	<2.0	2	2
9/29/2007	<2.0	2	2
9/30/2007	<2.0	2	2
10/1/2007	<2.0	2	2
10/2/2007	2	2	2
10/3/2007	<2.0	2	2
10/4/2007	<2.0	2	2
10/5/2007	<2.0	2	2
10/6/2007	2	2	2
10/7/2007	<2.0	2	2
10/8/2007	2	2	2
10/9/2007	2	2	2
10/10/2007	<2.0	2	2
10/11/2007	<2.0	2	2
10/12/2007	<2.0	2	2
10/13/2007	<2.0	2	2
10/14/2007	<2.0	2	2
10/15/2007	<2.0	2	2

09-0172

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWWRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
8/29/2007	<2.0	2	2
8/30/2007	<2.0	2	2
8/31/2007	<2.0	2	2
9/1/2007	<2.0	2	2
9/2/2007	<2.0	2	2
9/3/2007	<2.0	2	2
9/4/2007	<2.0	2	2
9/5/2007	<2.0	2	2
9/6/2007	<2.0	2	2
9/7/2007	<2.0	2	2
9/8/2007	<2.0	2	2
9/9/2007	<2.0	2	2
9/10/2007	<2.0	2	2
9/11/2007	<2.0	2	2
9/12/2007	<2.0	2	2
9/13/2007	<2.0	2	2
9/14/2007	<2.0	2	2
9/15/2007	<2.0	2	2
9/16/2007	2	2	2
9/17/2007	<2.0	2	2
9/18/2007	<2.0	2	2
9/19/2007	<2.0	2	2
9/20/2007	<2.0	2	2
9/21/2007	<2.0	2	2
9/22/2007	<2.0	2	2
9/23/2007	<2.0	2	2
9/24/2007	<2.0	2	2
9/25/2007	<2.0	2	2
9/26/2007	<2.0	2	2
9/27/2007	<2.0	2	2
9/28/2007	<2.0	2	2
9/29/2007	<2.0	2	2
9/30/2007	<2.0	2	2
10/1/2007	<2.0	2	2
10/2/2007	2	2	2
10/3/2007	<2.0	2	2
10/4/2007	<2.0	2	2
10/5/2007	<2.0	2	2
10/6/2007	2	2	2
10/7/2007	<2.0	2	2
10/8/2007	2	2	2
10/9/2007	2	2	2
10/10/2007	<2.0	2	2
10/11/2007	<2.0	2	2
10/12/2007	<2.0	2	2
10/13/2007	<2.0	2	2
10/14/2007	<2.0	2	2
10/15/2007	<2.0	2	2

09-0173

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
10/16/2007	2	2	2
10/17/2007	4	4	2.043794297
10/18/2007	<2.0	2	2.043794297
10/19/2007	<2.0	2	2.043794297
10/20/2007	<2.0	2	2.043794297
10/21/2007	2	2	2.043794297
10/22/2007	<2.0	2	2.043794297
10/23/2007	2	2	2.043794297
10/24/2007	<2.0	2	2.043794297
10/25/2007	<2.0	2	2.043794297
10/26/2007	2	2	2.043794297
10/27/2007	<2.0	2	2.043794297
10/28/2007	<2.0	2	2.043794297
10/29/2007	<2.0	2	2.043794297
10/30/2007	<2.0	2	2.043794297
10/31/2007	2	2	2.043794297
11/1/2007	<2.0	2	2.043794297
11/2/2007	<2.0	2	2.043794297
11/3/2007	<2.0	2	2.043794297
11/4/2007	<2.0	2	2.043794297
11/5/2007	<2.0	2	2.043794297
11/6/2007	2	2	2.043794297
11/7/2007	<2.0	2	2.043794297
11/8/2007	<2.0	2	2.043794297
11/9/2007	<2.0	2	2.043794297
11/10/2007	<2.0	2	2.043794297
11/11/2007	<2.0	2	2.043794297
11/12/2007	<2.0	2	2.043794297
11/13/2007	<2.0	2	2.043794297
11/14/2007	<2.0	2	2.043794297
11/15/2007	<2.0	2	2.043794297
11/16/2007	<2.0	2	2.043794297
11/17/2007	<2.0	2	2.043794297
11/18/2007	<2.0	2	2
11/19/2007	<2.0	2	2
11/20/2007	<2.0	2	2
11/21/2007	<2.0	2	2
11/22/2007	<2.0	2	2
11/23/2007	<2.0	2	2
11/24/2007	2	2	2
11/25/2007	<2.0	2	2
11/26/2007	<2.0	2	2
11/27/2007	<2.0	2	2
11/28/2007	<2.0	2	2
11/29/2007	<2.0	2	2
11/30/2007	<2.0	2	2
12/1/2007	<2.0	2	2
12/2/2007	2	2	2

09-0174

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWWRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
10/16/2007	2	2	2
10/17/2007	4	4	2.043794297
10/18/2007	<2.0	2	2.043794297
10/19/2007	<2.0	2	2.043794297
10/20/2007	<2.0	2	2.043794297
10/21/2007	2	2	2.043794297
10/22/2007	<2.0	2	2.043794297
10/23/2007	2	2	2.043794297
10/24/2007	<2.0	2	2.043794297
10/25/2007	<2.0	2	2.043794297
10/26/2007	2	2	2.043794297
10/27/2007	<2.0	2	2.043794297
10/28/2007	<2.0	2	2.043794297
10/29/2007	<2.0	2	2.043794297
10/30/2007	<2.0	2	2.043794297
10/31/2007	2	2	2.043794297
11/1/2007	<2.0	2	2.043794297
11/2/2007	<2.0	2	2.043794297
11/3/2007	<2.0	2	2.043794297
11/4/2007	<2.0	2	2.043794297
11/5/2007	<2.0	2	2.043794297
11/6/2007	2	2	2.043794297
11/7/2007	<2.0	2	2.043794297
11/8/2007	<2.0	2	2.043794297
11/9/2007	<2.0	2	2.043794297
11/10/2007	<2.0	2	2.043794297
11/11/2007	<2.0	2	2.043794297
11/12/2007	<2.0	2	2.043794297
11/13/2007	<2.0	2	2.043794297
11/14/2007	<2.0	2	2.043794297
11/15/2007	<2.0	2	2.043794297
11/16/2007	<2.0	2	2.043794297
11/17/2007	<2.0	2	2.043794297
11/18/2007	<2.0	2	2
11/19/2007	<2.0	2	2
11/20/2007	<2.0	2	2
11/21/2007	<2.0	2	2
11/22/2007	<2.0	2	2
11/23/2007	<2.0	2	2
11/24/2007	2	2	2
11/25/2007	<2.0	2	2
11/26/2007	<2.0	2	2
11/27/2007	<2.0	2	2
11/28/2007	<2.0	2	2
11/29/2007	<2.0	2	2
11/30/2007	<2.0	2	2
12/1/2007	<2.0	2	2
12/2/2007	2	2	2

09-0175

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWVRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
12/3/2007	<2.0	2	2
12/4/2007	<2.0	2	2
12/5/2007	<2.0	2	2
12/6/2007	2	2	2
12/7/2007	<2.0	2	2
12/8/2007	2	2	2
12/9/2007	2	2	2
12/10/2007	<2.0	2	2
12/11/2007	<2.0	2	2
12/12/2007	<2.0	2	2
12/13/2007	<2.0	2	2
12/14/2007	<2.0	2	2
12/15/2007	<2.0	2	2
12/16/2007	2	2	2
12/17/2007	4	4	2.043794297
12/18/2007	<2.0	2	2.043794297
12/19/2007	<2.0	2	2.043794297
12/20/2007	<2.0	2	2.043794297
12/21/2007	2	2	2.043794297
12/22/2007	<2.0	2	2.043794297
12/23/2007	2	2	2.043794297
12/24/2007	<2.0	2	2.043794297
12/25/2007	<2.0	2	2.043794297
12/26/2007	2	2	2.043794297
12/27/2007	<2.0	2	2.043794297
12/28/2007	<2.0	2	2.043794297
12/29/2007	<2.0	2	2.043794297
12/30/2007	<2.0	2	2.043794297
12/31/2007	2	2	2.043794297

Victor Valley Wastewater Reclamation Authority

Extrapolation of Possible Fecal Coliform 30 day rolling log mean (geometric mean) from 2007 Total Coliform Data

Sample Date VWRA Effluent	Total Coliform #/100ml	Extrapolated Fecal Coliform MPN/100 mL	30 day rolling log mean coliform
12/3/2007	<2.0	2	2
12/4/2007	<2.0	2	2
12/5/2007	<2.0	2	2
12/6/2007	2	2	2
12/7/2007	<2.0	2	2
12/8/2007	2	2	2
12/9/2007	2	2	2
12/10/2007	<2.0	2	2
12/11/2007	<2.0	2	2
12/12/2007	<2.0	2	2
12/13/2007	<2.0	2	2
12/14/2007	<2.0	2	2
12/15/2007	<2.0	2	2
12/16/2007	2	2	2
12/17/2007	4	4	2.043794297
12/18/2007	<2.0	2	2.043794297
12/19/2007	<2.0	2	2.043794297
12/20/2007	<2.0	2	2.043794297
12/21/2007	2	2	2.043794297
12/22/2007	<2.0	2	2.043794297
12/23/2007	2	2	2.043794297
12/24/2007	<2.0	2	2.043794297
12/25/2007	<2.0	2	2.043794297
12/26/2007	2	2	2.043794297
12/27/2007	<2.0	2	2.043794297
12/28/2007	<2.0	2	2.043794297
12/29/2007	<2.0	2	2.043794297
12/30/2007	<2.0	2	2.043794297
12/31/2007	2	2	2.043794297

09-0177

ATTACHMENT THREE

09-0178

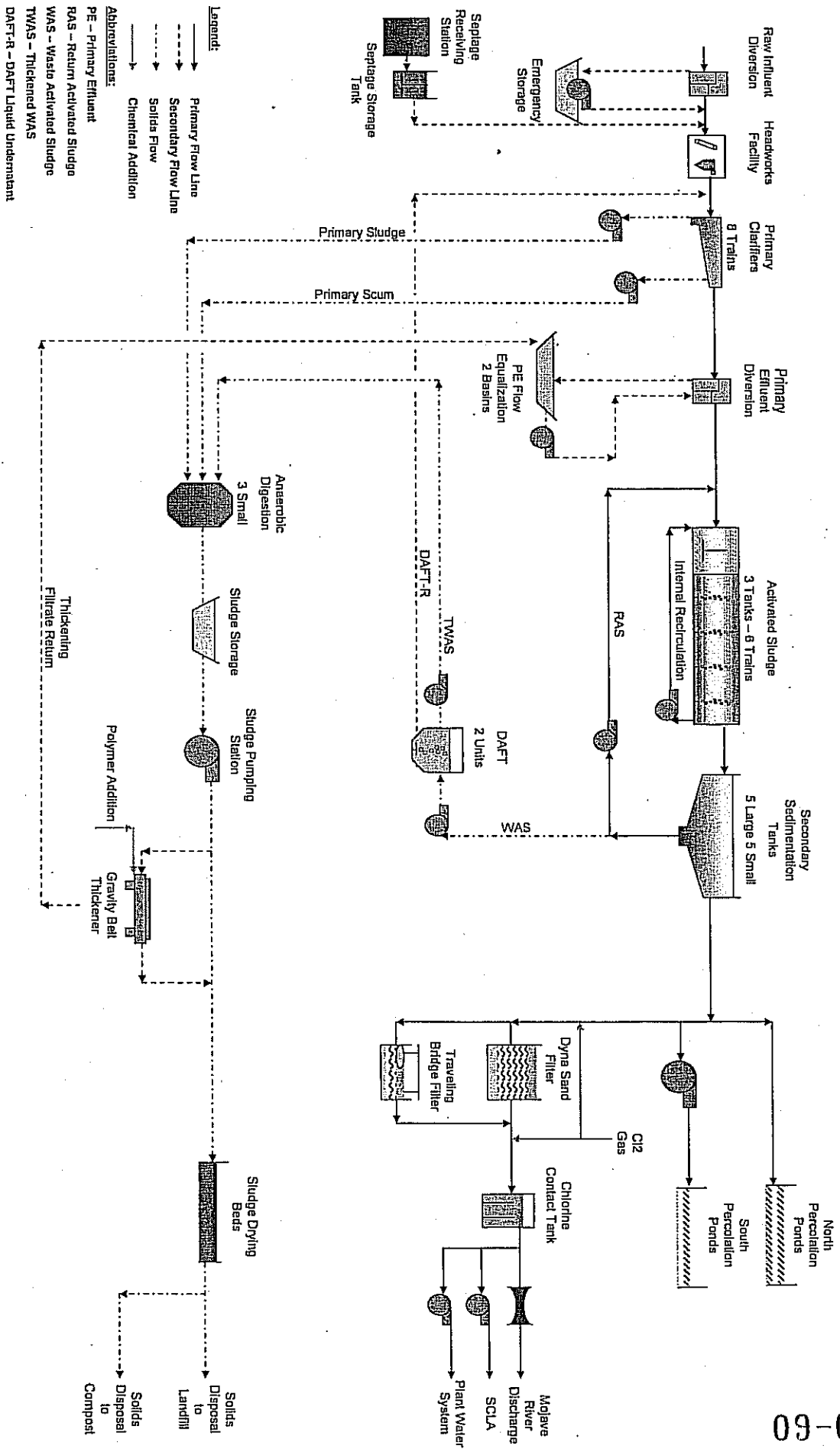


Figure 1.1 - VVWRA Existing Process Schematic (18 MGD Designed Flow - Operation From Present to Dec 2009)

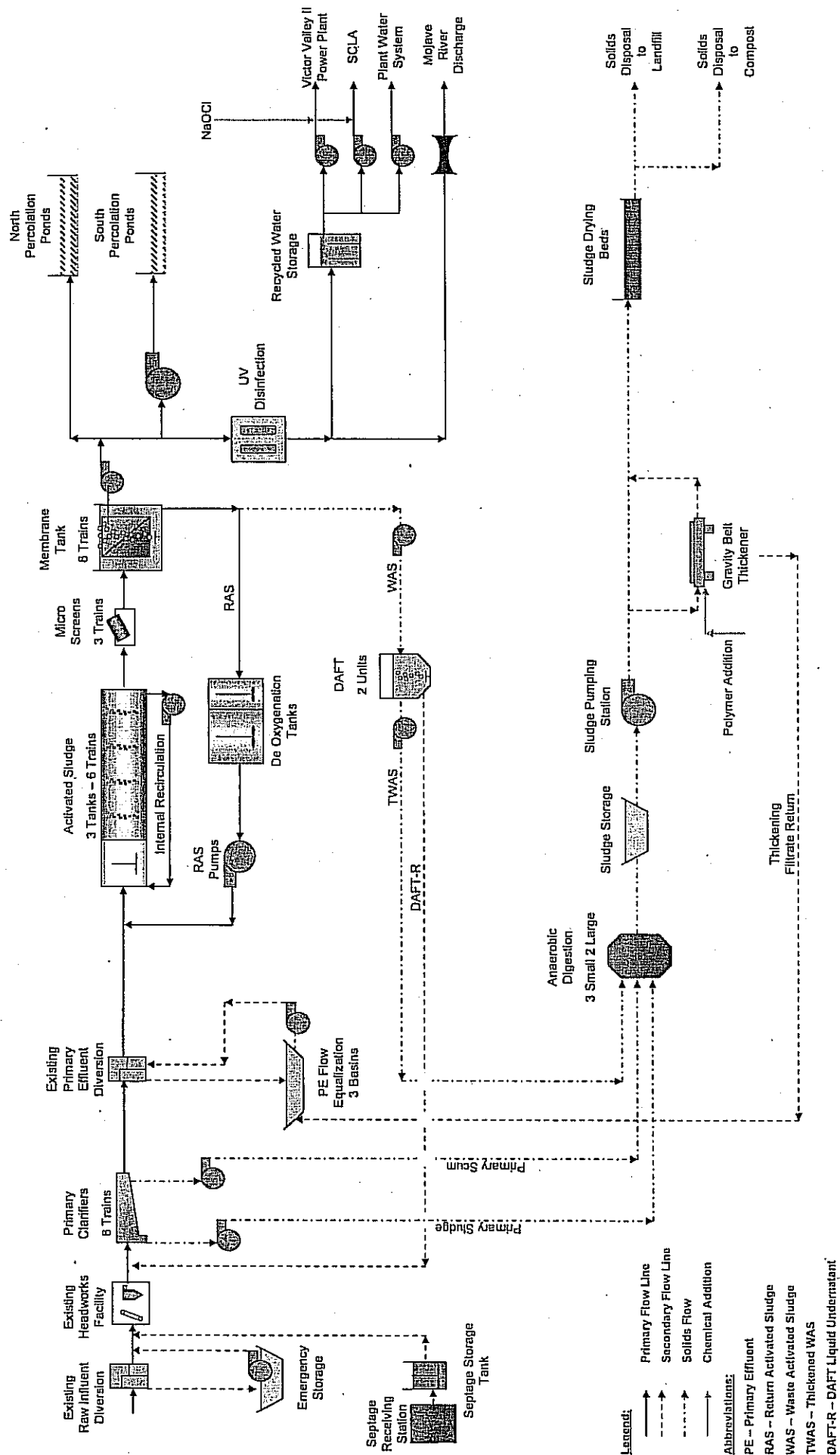
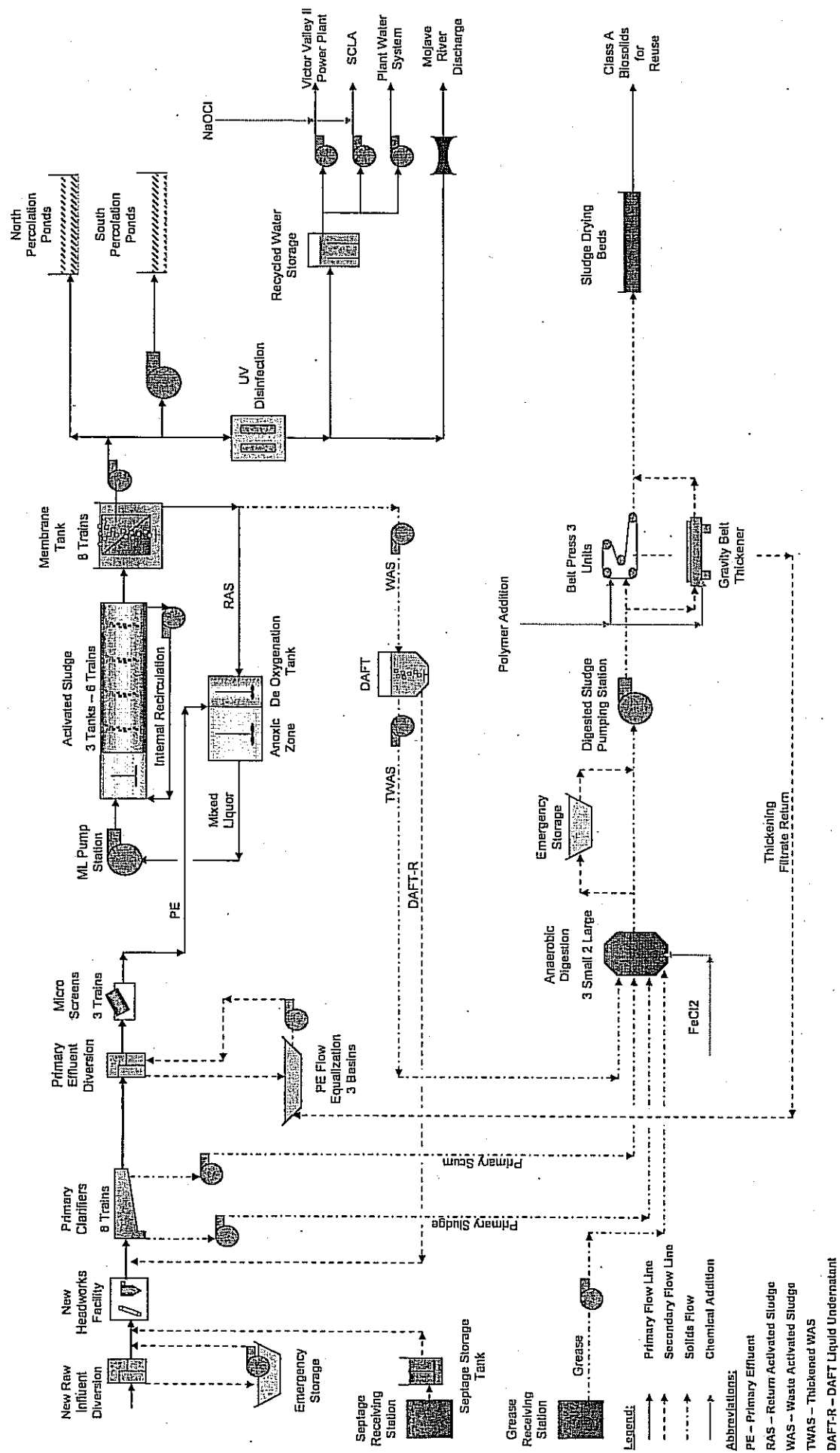


Figure 1.2 – VWRA Phase IIIA Process Schematic (18 MGD Projected Flow - Operation from Jan 2010 to April 2011)

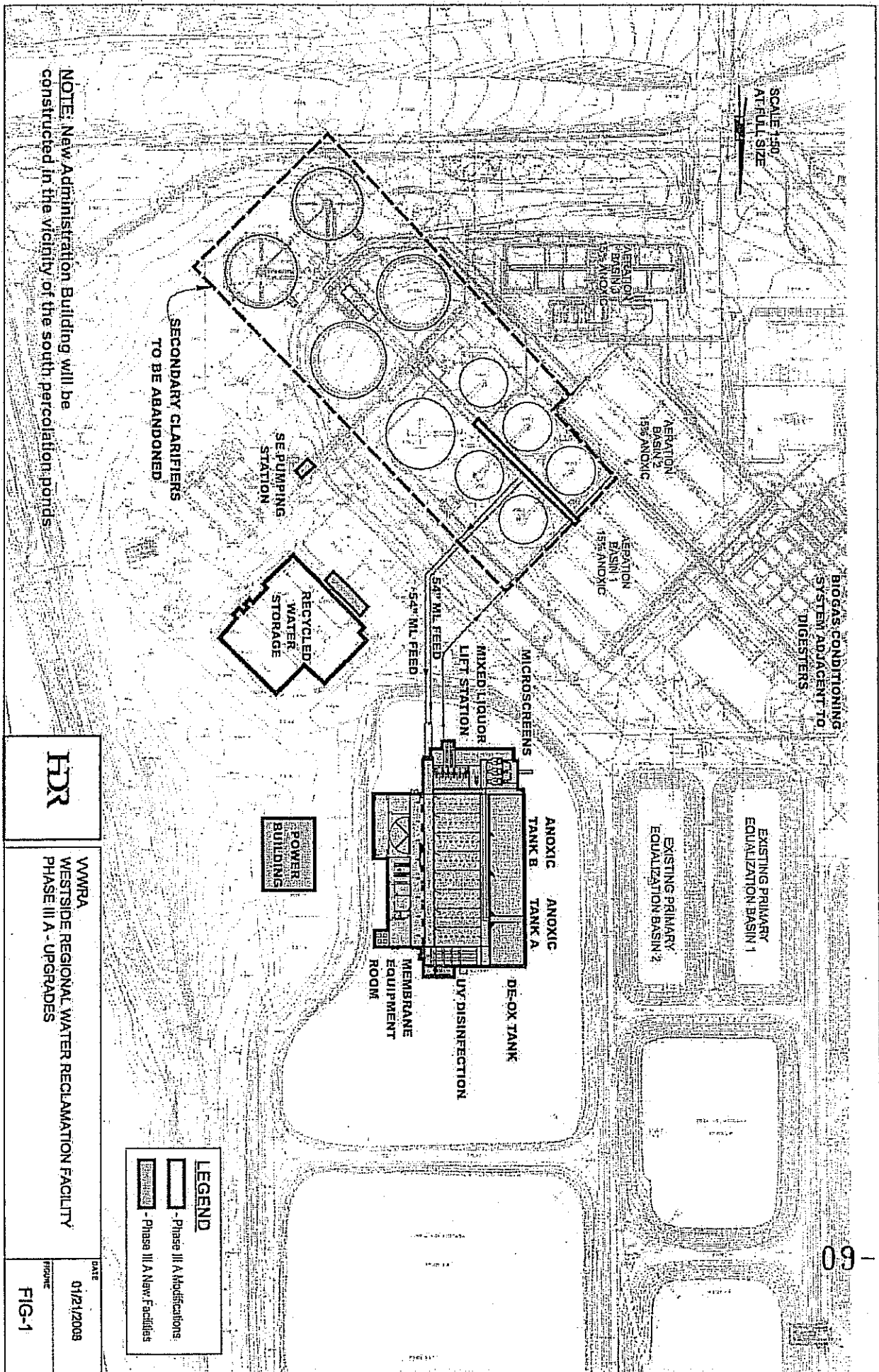


09-0181

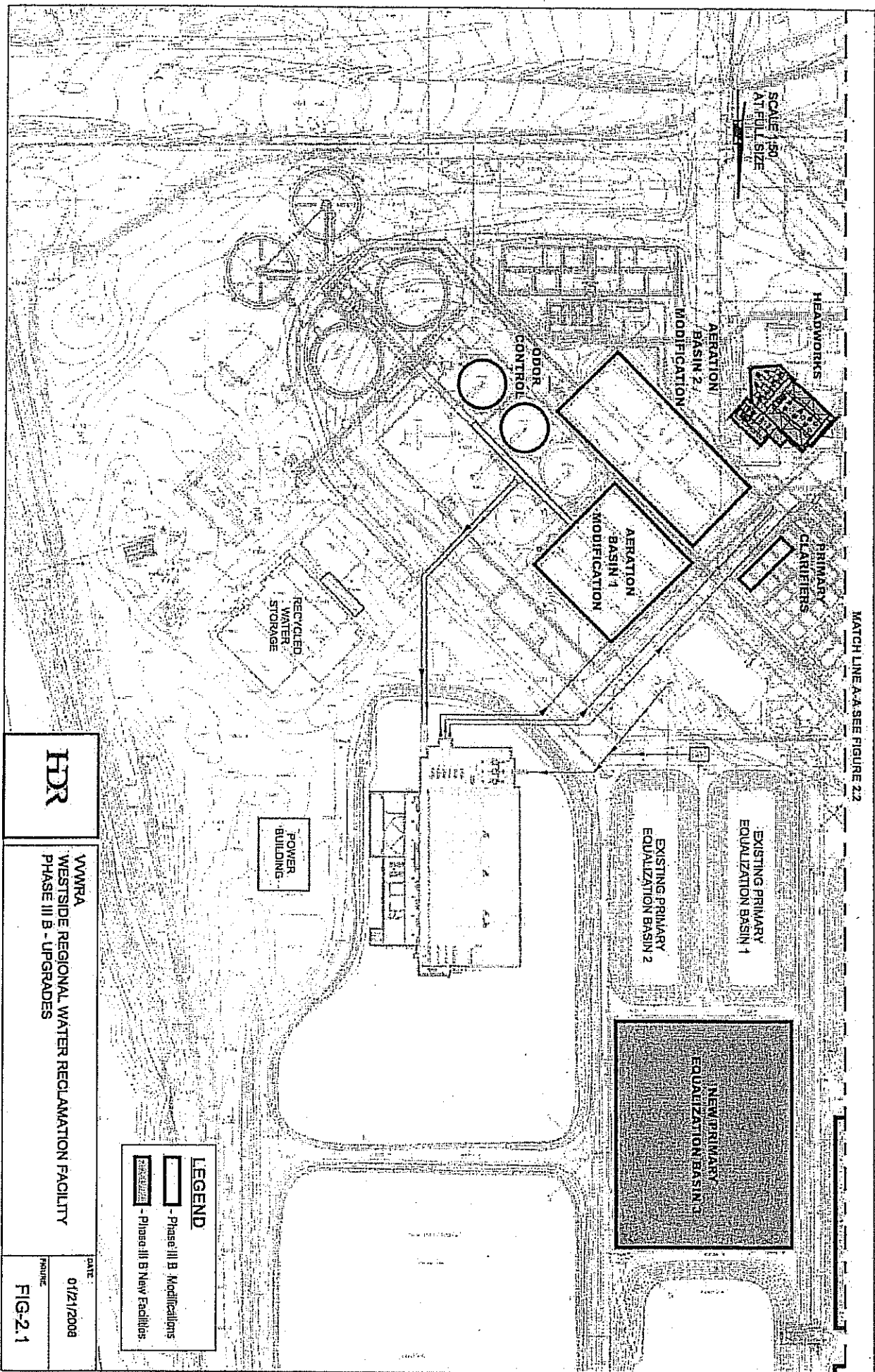
Figure 1.3 – VVWRA Phase IIB Process Schematic (22 MGD Projected Flow - Operation from May 2011)

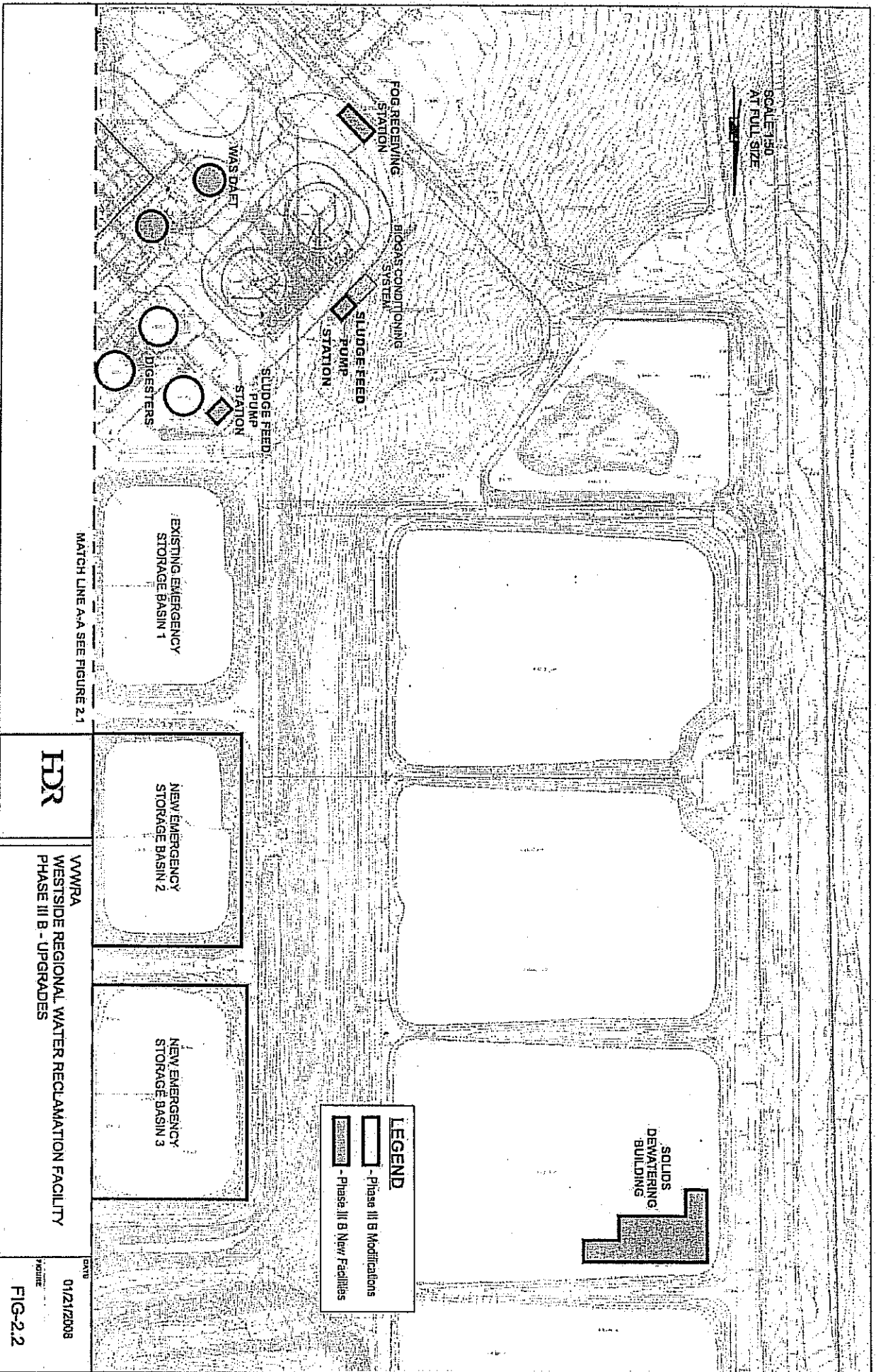
ATTACHMENT FOUR

09-0182



09-0183





ENCLOSURE 3

09-0186



**California Regional Water Quality Control Board
Lahontan Region**



Linda S. Adams
Secretary for
Environmental Protection

Victorville Office
14440 Civic Drive, Suite 200, Victorville, California 92392
(760) 241-6583 • Fax (760) 241-7308
<http://www.waterboards.ca.gov/lahontan>

Arnold Schwarzenegger
Governor

January 29, 2008

WDID No. 6B360109001

Logan Olds, General Manager
Victor Valley Water Reclamation Authority
15776 Main St., Suite 3
Hesperia, CA 92345

**RESPONSES TO COMMENTS – ORDER R6V-2008-TENTATIVE - VICTOR VALLEY
WASTEWATER RECLAMATION AUTHORITY, VICTORVILLE, SAN BERNARDINO
COUNTY**

Thank you for your timely comments, dated January 23, 2008, to the above-referenced Tentative Order. Enclosed are Water Board staff's responses to your comments. A Proposed Order will be mailed to you separately. If you have any questions, please call me at (760) 241-2434.

Sincerely,

Jehiel Cass, P.E.
Water Resources Control Engineer

ENC: Responses to Comments

Public/Board Orders 2008/VVWRA/Proposed/RTC/Water Board RTC-Cov Ltr (jwc 1-25-2008)

**Responses to VVWRA Comments Dated January 23, 2008
Tentative NPDES Permit
Water Board staff Responses in Bold**

1. Page 8 third paragraph, does not list the County of San Bernardino Service areas 42 and 64 as a VVWRA member entity.

RESPONSE: The paragraph was revised to read as follows:

"The trunk line sewer collection system owned and operated by VVWRA is regulated under State Water Board general Order 2006-2003-DWQ as well as lateral collection systems owned and operated by the VVWRA member entities: City of Hesperia, City of Victorville, Town of Apple Valley, and San Bernardino County Service Areas 42 (Oro Grande) and 64 (Spring Valley Lake). Storm water discharges from the plant are regulated under State Water Board General Industrial Order 97-03DWQ and General Construction Order 99-08DWQ."

2. Page 9 first paragraphs, replace "...convert existing SECONDARY CLARIFIERS..." with ".....convert existing AIR BAYS..."

RESPONSE: The paragraph was revised to read as follows:

"In the 22 MGD Phase III Expansion Project, the Discharger will add biological nitrogen removal capability and replace tertiary filtration capability using membrane biological reactor technology (see Facility Flow Sheet, Attachment B). Because this technology functions as both secondary clarification and tertiary filtration, the Discharger will convert existing air bays to pre-anoxic reactor tanks and post-anoxic reactor tanks. The Discharger also proposes to replace chlorination disinfection and dechlorination technologies with UV filtration."

3. Page 9 first paragraph, delete last sentence "The carbon source.....primary clarifier". The latest modeling indicates that there is sufficient soluble BOD to eliminate the fermenter.

RESPONSE: See the response to item No. 2.

4. Page 15-16 Table 6, Page 15 Table 6, The cyanide and zinc limits in Table 6 are different than the limits proposed in the Template version of the permit developed by Tetra Tech, which we reviewed in November. These limits appear to have been taken from the earlier, April 2006 Tentative Order rather than the updated version developed by Tetra Tech. The Fact Sheet does not directly address how the cyanide and zinc limits were calculated and therefore does not explain why the limits were changed. We request the Regional Board check the calculations to make sure there was no error and, if not, explain why the limits were changed.

RESPONSE: No changes were made. The effluent limitations for zinc and cyanide in the January 2008 Tentative Order and the April 2006 Tentative Order are calculated correctly. The effluent limitations for CTR pollutants are calculated using the method outlined in the SIP based on effluent data submitted by VVWRA to establish the coefficient of variation (standard deviation divided by the mean of the effluent data) for each pollutant concentration. The Fact Sheet for the Tentative Order provides sample calculations for copper, based on aquatic life criteria, and chlorodibromomethane,

based on human health criteria. All of the water quality-based effluent limitations based on aquatic life criteria from the CTR (i.e., copper, zinc, cyanide) are calculated in the same manner, but the criteria values and, thus, the effluent concentration allowance (ECA) and the coefficient of variation (CV) vary by pollutant.

5. Page 17, Item b. VVWRA is requesting a 14 mgd ANNUAL AVERAGE not a monthly average.

RESPONSE: The flow limitation was changed as follows.

"The average annual flow of effluent discharged to the Mojave River shall not exceed 14.0 million gallons per day (mgd) in any calendar year."

Order R6V-2008-Tentative included a monthly average flow limit of 14 MGD. (The Fact Sheet inadvertently retained an annual average limit from a prior version). An annual vs. monthly average flow limit does not affect the mass limits, which were based on 14 MGD. The Water Board did not propose changing the mass limits to reflect a potentially higher daily or monthly flow as VVWRA proposes. If an annual average flow limit is 14 MGD, VVWRA could have monthly and daily flows that exceed 14 MGD by a wide margin and still be able to meet the annual flow limit. Flows too far above 14 MGD on a daily or monthly basis would cause violations in meeting daily or monthly mass-based limits, as recently occurred for total dissolved solids. However, VVWRA wants operational flexibility to discharge at higher rates at certain times of the year. For this reason, the flow limit was returned to a calendar year annual average, with the understanding that mass based effluent limits are based on a maximum daily rate.

6. Page 17 item d, Fecal Coliform, please see attached document from VVWRA Laboratory Supervisor Gina Cloutier. Also Fecal coliform is a subset of total coliform and the limitation for total coliform is 1/10th of the proposed fecal coliform limit. Moreover, the VVWRA lab is currently not ELAP-approved for the fecal coliform test.

RESPONSE: The effluent limitations for both fecal and total coliform were retained because the Water Quality Control Plan for the Lahontan Region (Basin Plan) includes receiving water quality objectives for both constituents. With regard to the January 22, 2008 memorandum from Gina Cloutier, VVWRA Laboratory Supervisor:

- Water Board staff evaluated the 2007 data included with that memorandum and concur it demonstrates the proposed effluent limit for fecal coliform was met based on the total coliform data.
- Therefore, the effluent monitoring requirement for fecal coliform, Attachment E, Table 3, was changed from 1/day to 5 evenly spaced in one 30-day period/yr.
- With regard to laboratory certification for fecal coliform, see the footnote modifications, below.
- Footnote 2, Attachment E, Table 3 was changed as follows:
"Based on 2007 data for total coliform included with the January 22, 2008 memorandum from Gina Cloutier, VVWRA Laboratory Supervisor, included with the VVWRA letter dated January 23, 2008, the total coliform MPN measurements show that the fecal coliform effluent limitations were not exceeded

for the entire year. Therefore, fecal coliform monitoring is reduced to a minimum five samples evenly spaced in any 30-day period per year. Water Board staff finds it is acceptable for VVWRA to use its in-house laboratory to analyze fecal coliform until Department of Health Services certification of this constituent is completed, expected for November 2008. Until such certification is obtained, VVWRA shall report the status of certification with each fecal coliform sample result submitted, until certification is obtained.

- The same changes were also made to the Fact Sheet, Attachment F, Table 18. Summary of Effluent Monitoring Requirements (EFF-001).

7. Page 19, number 3, see #6 above

RESPONSE: No changes were made. Page 19 states the receiving water objective for coliform bacteria found in the Water Quality Control Plan for the Lahontan Region (Basin Plan), Page 3-4 and includes the citation for the US EPA guidance document determining compliance with bacteria objectives.

8. Page 31, Item d, and other references to three additional receiving water monitoring stations must be changed. During previous discussions it was recognized that providing additional receiving water monitoring sites was duplicative of the SEP analysis and that these would be removed. Not removing them implies that the SEP is permanent. Therefore, approximately one third of the costs associated with the SEP will be ineligible because VVWRA will now be performing them as part of the permit. VVWRA requests that this section (and Attachment B-5 and RMP Monitoring Locations in Tables 1 and 4) be modified consistent with the following:

d. Receiving Water Monitoring. By [~~three~~ twelve months following the effective date in this Order] the Discharger shall propose for the Executive Officer's concurrence, additional a new receiving water monitoring locations RSW-003, RSW-004, and RSW-005 generally as shown on Attachment B-5, to replace existing receiving water monitoring station RSW-002, to replace existing receiving water monitoring station RSE-002.

By [~~six months following the Executive Officer's concurrence the effective date in this Order~~] the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at the above locations. The rationale for proposing twelve months is that this would allow completion of the SEP monitoring, which will provide valuable information for locating a new receiving water monitoring station. The delay would not cause a delay in gathering receiving water information because the SEP is already gathering much of this information. In that respect, it would eliminate any duplication of monitoring under the permit and the SEP and preserve the eligibility of the SEP monitoring costs. The rationale for replacing the existing receiving water monitoring station with a new one closer to the discharge is that it would result in receiving water monitoring consistent with most other dischargers in the state, i.e., one upstream station and one downstream station, and reduce VVWRA's receiving water monitoring costs. There does not appear to be any good reason to have four downstream receiving water monitoring stations, especially considering the high quality effluent that will be produced upon completion of Phase III and the lack of any dilution credit. The rationale for providing six months after Executive Officer concurrence on the site selection to construct the appurtenances necessary is that it will take this amount of time to design, arrange for funding and construct the necessary access structures. We will not be able

to begin this process until the Executive Officer has concurred with the site location. (Assumes no significant environmental permitting issues for the access)

RESPONSE: In a meeting at the Water Board's office on January 25, 2008, it was agreed that: (1) existing down stream monitoring location (RSW-002) would be retained for data continuity, (2) an additional down stream monitoring location (RSW-003) would be established after permit adoption, and (3) after a 12-month data collection period at this location, an additional down stream monitoring location would be established. Issues relating to the supplemental environmental Project, now underway, are separate from this Order. Provision VI.C.7.d is revised as follows:

"Receiving Water Monitoring. By June 4, 2008, the Discharger shall propose for the Executive Officer's concurrence, an additional receiving water monitoring location RSW-003 generally as shown on Attachment B-5.

By December 4, 2008, the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at this location.

By December 4, 2009, following one year of data collection at location RSW-003, the Discharger shall propose for the Executive Officer's concurrence, an additional receiving water monitoring location RSW-004 generally as shown on Attachment B-5.

By June 4, 2010, the Discharger shall complete construction of any appurtenances or necessary access points and begin receiving water monitoring at this location."

The Executive Officer is authorized to extend the deadlines in this section by letter as necessary to accommodate acquiring environmental permits provided VVWRA exhibits good faith to obtain them."

Figure B-4, Attachment E, Table 1, and Attachment E, Section VI.A.1 were revised accordingly.

9. Page 47, Obtain treatment line diagrams for Phase 3 A and B

RESPONSE: Figures C-1 (page 46), C-2 (page 47), and C-3 (page 48) are replaced with the following figures attached to your January 23, 2008 letter (using C1 – C-3 nomenclature); Figure 1.1, Figure 1.2, Figure 1.3, respectively. Additionally, Figures C-4, C-5 and C-6 were added showing the components of the Phase III-A and III-B upgrades.

10. Page 58, IX B. see #6 above

RESPONSE: See the response to No. 6 above.

11. Page 60 Table 1, remove all but one downstream receiving water monitoring station. Alternatively note that RSW-002 will be utilized until RSW-003 location is approved and it is accessible.

RESPONSE: See the response to No. 8 above.

12. Page 62, Table 3, remove fecal coliform requirement, Change Minimum Sampling Frequency for Ammonia Nitrogen, Nitrate Nitrogen, Total Kjeldahl Nitrogen, and MBAS to 1/month, to make the frequency consistent with other parameters and with the frequencies that were in the template version of the permit. (MBAS was 1/week in the template, but that does not seem reasonable given the 1/month frequency for other pollutants.)

RESPONSE: Minimum Sampling Frequency

- Coliform – See the response to no. 6, above.
- MBAS – Changed to 1/month.
- Nitrogen series (ammonia, nitrate, nitrite, total kjeldahl nitrogen) – Not changed to 1/month as requested, but reduced from 1/week to 2/month. Because nitrogen effluent limitations are newly added and because major plant upgrades are in progress, this level of data is the minimum Water Board staff believes necessary to determine compliance with interim and final effluent limitations during this permit cycle.

13. Page 63, Table 3, remove 180 day fecal coliform requirement

RESPONSE: See the response to No. 6 above.

14. Page 67 Table 4, see Item 11 above. Change the monitoring frequency for Hardness to 1/quarter. This is consistent with other parameters. There does not appear to be any reason to require monthly sampling for hardness, and a requirement for monthly receiving water sampling of any kind would significantly increase VVWRA's receiving water monitoring costs.

RESPONSE: The hardness data collected will be used in the next permit cycle to calculate the applicable CTR criteria for metals, which are hardness dependent. Quarterly monitoring would provide 20 samples to work with, which is more than available for this Order. VVWRA's request is not unreasonable. Changes were made for both the effluent and receiving water monitoring frequencies to 1/quarter.

15. Page 69, modify reference to RSW-003 for chronic aquatic toxicity testing consistent with Item 11 above.

RESPONSE: Page 68, not 69, contains the indicated reference. The section heading was revised as follows.

"B. Chronic Aquatic Toxicity Testing – Monitoring Location RSW-003 (RSW-002 until station RSW-003 established)

16. Page 83 first paragraph, "....discharge to 14 mgd when the Phase III A is complete."

RESPONSE: Change will be made as requested.

17. Page 87 fourth paragraph, "The discharger will convert existing secondary clarifiers to pre-anoxic reactor tanks and post-anoxic reactor tanks." Information developed and modeled by HDR indicate that it will be less expensive to modify the existing air bays and build a tank

attached to the MBR system than it will be to modify the secondary clarifiers and install all the piping. The sentence should read, "The discharger will convert existing air bays and construct additional tankage for pre and post anoxic reactor tanks".

RESPONSE: Change will be made as requested.

18. Page 107 Table 10, remove fecal coliform, see #6 above

RESPONSE: See response to No. 6 above.

19. Page 115, Ammonia Nitrogen, how can you use warm and cold??? There isn't any data to substantiate the cold claim.

RESPONSE: The Basin Plan indicates that the beneficial uses of the Mojave River include both WARM and COLD, reflecting a desire to protect both warm water and cold water species. It does not indicate that those beneficial uses apply seasonally or that the water quality objectives that are included in the Basin Plan to protect those uses (such as ammonia) apply seasonally. Consequently, the effluent limitations for ammonia are calculated based on the most protective objective (the objective for protection of cold water species) during the most critical conditions (the warmest month). If there are data indicating that the COLD use is inappropriate or should be applied only seasonally, those data should be used to request a modification of the Basin Plan.

20. Page 118 third paragraph, "In treated wastewater with biological nutrient removal, total nitrogen consists of essentially ammonia-nitrogen and nitrate-nitrogen" I COMPLETELY disagree, based upon the analysis performed by HDR dissolved nitrogen (of which no treatment exists to remove) comprises over 20% of total nitrogen. Furthermore ammonia is anticipated to be 0.1 mg/L while dissolved nitrogen will be 1.5 mg/L (page 6 Figure 5 of the HDR memo)

RESPONSE: The paragraph was changed as follows.

"In treated wastewater with biological nutrient removal, total nitrogen consists of organic-nitrogen, ammonia-nitrogen, nitrite-nitrogen, and nitrate-nitrogen. The nitrification process usually oxidizes ammonia to nitrate, and nitrite-nitrogen is usually present in concentrations of less than 0.5 mg/L. In addition, most of the organic-nitrogen is consumed in the activated sludge and nitrification process. Therefore, for purposes of developing effluent limits for nitrate-nitrogen, the nitrate-nitrogen long-term average is the difference between the total nitrogen long-term average and the ammonia-nitrogen long-term average. As determined in the section for ammonia-nitrogen, the AMEL for ammonia nitrogen is 0.80. Using the CV of 0.55 and the 1214 effluent data points collected by the Discharger between January 2001 and March 2006 for ammonia-nitrogen, the long-term average concentration for ammonia nitrogen is $0.80 \div 1.17 = 0.70$ mg/L. Thus, the expected long-term performance concentration for nitrate-nitrogen is 6.0 mg/L - 0.7 mg/L = 5.3 mg/L."

21. Page 128, remove Fecal Coliform, see #6 above.

RESPONSE: See response to No. 6 above.

22. Page 137 first paragraph and Page 138; remove additional receiving water monitoring stations pursuant to Item 8 above.

RESPONSE: See response to No. 8 above.

23. Page 141 Toxicity Evaluations, haven't we done this already??

RESPONSE: The requirement is for a response plan to be submitted stating contingency actions that would be implemented should sample data indicate effluent toxicity. Water Board staff is not aware that such a plan was previously prepared.

24. Page 142 is MISSING

RESPONSE: Page 142 was inadvertently omitted from Order R6V-2008-Tentative. A (PDF) copy of page 142 was sent to you by Water Board staff Jehiel Cass on January 23, 2008.

Public/Board Orders 2008/VVWRA/Proposed/RTC/Responses to VVWRA Comments Tent (JWC 1-23-2008)



California Regional Water Quality Control Board

Lahontan Region



Linda S. Adams
Secretary for
Environmental Protection

Victorville Office
14440 Civic Drive, Suite 200, Victorville, California 92392
(760) 241-6583 • Fax (760) 241-7308
<http://www.swrcb.ca.gov/rwqcb6>

Arnold Schwarzenegger
Governor

January 29, 2008

WDID NO. 6B360109001

To Interested Parties:

**PROPOSED WASTE DISCHARGE REQUIREMENTS FOR THE VICTOR VALLEY
WASTEWATER RECLAMATION AUTHORITY; VICTOR VALLEY WASTEWATER
TREATMENT PLANT, SAN BERNARDINO COUNTY**

and

**PROPOSED CEASE AND DESIST ORDER VIOLATIONS OF WASTE DISCHARGE
REQUIREMENTS FOR VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY;
VICTOR VALLEY WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY**

Enclosed for your information is a copy of the proposed agenda items for your review.
The Regional Board will be considering adoption of the proposed items during its
February 13 and 14, 2008 meeting in Victorville, California.

If you need further information regarding this meeting, please contact our office.

Sincerely,

Rebecca Phillips
Office Technician

Enclosures: Item 9 and 10
Agenda Announcement

cc: Attached Mailing List

VVWRA PROPOSED MAILING LIST

LOGAN OLDS, GENERAL
MANAGER
VVWRA
15776 MAIN STREET
HESPERIA CA 92345

LARRY WALKER, PRESIDENT
LARRY WALKER ASSOCIATES
707 4TH ST, STE 200
DAVIS CA 95616

MIKE PODEGRAZ, CITY MANAGER
CITY OF HESPERIA
15776 MAIN ST.
HESPERIA CA 92345

MANUEL BENITEZ
SUPERINTENDENT OF WATER/SANITATION
SAN BERNARDINO CO SPECIAL DISTRICTS
P.O. BOX 5004
VICTORVILLE CA 92395

BRUCE WILLIAMS, GENERAL MGR
TOWN OF APPLE VALLEY
14955 DALE EVANS PARKWAY
APPLE VALLEY CA 92307

JON ROBERTS, CITY MANAGER
CITY OF VICTORVILLE
14343 CIVIC DR
VICTORVILLE CA 92392